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Why I Am a Pictorial Photographer

(Number Thirty)

EDWARD P. McMURTRY

IT would be difficult, indeed, to add an original thought to that which has already been written of the enjoyment of pictorial photography. It is, I believe, a development of the universal desire to portray that begins in early childhood and that has found its way to the camera as a means of preserving and communicating ideas.

This, together with an admiration for beautifully made instruments and no small amount of curiosity concerning chemicals, was perhaps the reason for my becoming interested in photography thirty-three years ago.

A survey of my early efforts would reveal a leaning to the polite and educational. Worthy subjects, such as the Bridge of Sighs and the Coliseum at Rome, followed the school of those sepia enlargements that lend dignity to the well-furnished doctor's office. It was, in short, a period of stark facts boldly presented.

It has ever been my lot to observe that the purchase of each new camera presupposes better intentions. However true this may be, my first reflecting camera marked the new era; for so great was its influence that I decided to start again from the very beginning.

At that time, unfortunately, I did not have any friends who were interested in photography, and further instruction had to depend on what I could find in textbooks and photographic magazines. As to the value of the latter, I cannot speak too highly; for, in addition to the great amount of technical information that was to be found in the shape of contributions from fellow workers, there seemed to be, throughout their pages, the spirit of enthusiasm and encouragement —no small items when one is working alone. Furthermore, their reproductions of successful exhibition pictures afforded an excellent opportunity for the study of practical photographic composition and treatment.

My investigations following the new start were many and absorbing; so much so, in fact, that the thought of sending a print to a Salon was never seriously considered until a little over two years ago. It came about then in a rather indirect way, and entirely through the kindly interest of Will Connell.

I had been experimenting for several months with the problem of equipping a 2¼ x 3¼ folding pocket camera with a 4½-inch soft-focus lens, and, after four lenses of different makes had proved failures, I had at last found one of pictorial quality that could be focused by the distance-scale and at any aperture.

In order to demonstrate what this little outfit could do, I took a few prints that had been made with it, as well as some of my earlier attempts, to Mr. Connell for his opinion. Mr. Connell approved of several of these and suggested that I send them to the then not-far-distant 1928 Salon of the Camera Pictorialists of Los Angeles. Relying upon his excellent judgment, I entered the four prints that had made the best impression, and, to my utter amazement, had all four accepted. Since then, these four pictures have been hung three, six, eleven, and twenty times respectively.

I have been a member of the Camera Pictorialists of Los Angeles for the past two years, during which time I have sent entries to exhibitions whenever possible, for I con-

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sider that the Salon offers the very highest incentive for one's best efforts.

I think that one of the most noticeable benefits of pictorial photography is the development of the power of observation. This is manifested in an unconscious tendency to examine our everyday surroundings from the standpoint of composition and leads to the appreciation of much that would otherwise pass unnoticed. Even without a camera, it is an entertaining diversion.

Although it is quite possible to discover material for pictures almost everywhere, the anticipation of what is to be found off the beaten track is the inspiration of many trips. Remote and forgotten places are explored, and the imagination is called upon to reconstruct the atmosphere of the past.

The seaport and the harbor present untold opportunities in ever-changing composition. Sailing vessels, fishing gear, and the weather-beaten, tumble-down architecture of the waterfront hold for most of us, I believe, the appeal of the romantic.

It has been my experience that the emotional value of a subject depends largely upon the nature of its illumination. Morning sunshine seems to suggest animation; long shadows and the slanting rays of late afternoon incline toward tranquillity, and mist and rain carry with them a note of sadness.

I have also found that if the glare of midday sun is too harsh, when it falls directly upon a subject, it is extremely useful for back-lighting, owing to the reflected light in its shadows. Cloud-effects generally improve, often supply, balance, and have been known to usurp interest. Fog is a happy solution for an undesirable distant background; and, if it is a thick fog, it will invest the most prosaic with possibilities.

These few random notes are not intended as original in any sense of the word, but are only some lessons that I have learned and which have been helpful. I have always endeavored to portray scenes as they were, and without the later introduction of clouds or other interest. This is not prejudice, but preference; for I should like each of my prints to remind me of a place that really was—light, shade, sky; pictorial to the best of my ability, but a record, nevertheless, of a scene that once lived and of time pleasantly passed.

The Cult of the Small Picture

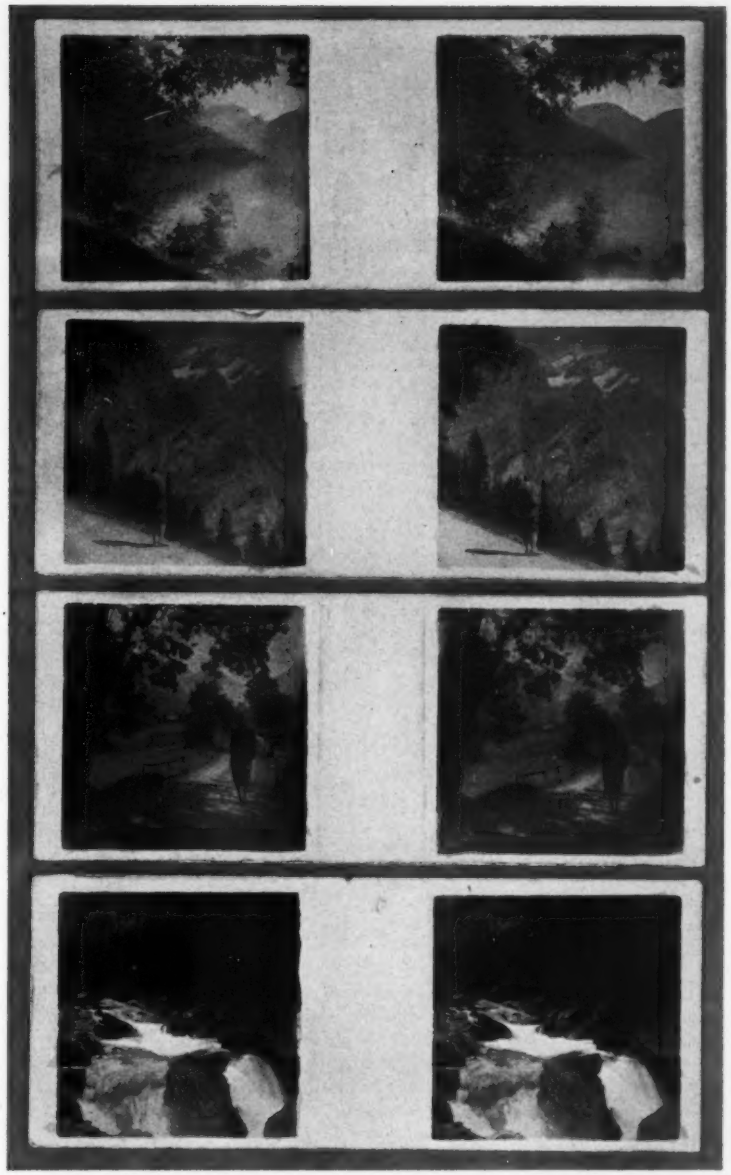
A Plea for 45 x 107 mm. Camera

T. H. SCANLAN

THE present-day tendency toward lightness and portability in photographic apparatus is the effect of various causes. The definition given by modern anastigmat lens permits of almost unlimited subsequent enlargement from small negatives without in any way betraying their humble origin, while the choice of plates and papers to give a desirable type of finished result, despite the high degree of magnification, is almost bewildering in its extent. Sensitive material, too, has unavoidably jumped up in price aong with other commodities in the "Cost of Living" tables, and the halcyon days when quarter-plates were a penny each is now but a memory. Furthermore, the short focus of lenses fitted to small-size cameras allows them to be used at very large apertures without unduly reducing the depth of field. The natural result is that the use of a tripod is to a large extent done away with, since fully exposed negatives—even with a correcting isochromatic screen in position—can be obtained with quite short exposures in the hand.

Fully awake to these facts, manufacturers have set to work, with the result that the modern small camera is a marvel of ingenuity. It is true that everything has been cut down to the minimum degree compatible with efficiency; but granted ordinary care and the use of a little common sense, results at least as good as those obtainable with a bulky field outfit may confidently be looked for.

To most amateurs the words "small camera" are synonymous with 2½" x 3½", and undoubtedly a great deal of incomparable work can be done and has been done in this size. I should like, however, in these notes to suggest the claims of a much smaller for-



Lake Lucerne
Overlooking the Lötschental
Sunshine and Shadow, Grindelwald
In the Klus, Kandersteg

T. H. SCANLAN

mat, which in my hands has performed a dual function with every satisfaction. The 45 x 107 millimeter (1¾ x 4¼ inches) stereoscopic camera makes two pictures simultaneously, each 1¾ inches square, with a gap of ¾-inch between them on the two halves of one plate. The two pictures are almost but not quite identical, owing to the difference between the two viewpoints from which they were made. It is the function of the stereoscope so to fuse the two pictures thus obtained that only one composite impression *in relief* remains. We need not for the moment go any more deeply into the stereoscopic aspect of the questions, since my main object here is to stress the possibilities of the 45 x 107 millimeter camera for the making of ordinary one-lens pictures.

To resume—the difference between the two pictures, trifling though it is, can frequently be turned to account when one picture of the pair is to be selected for enlargement. Having a choice of negatives, it will almost always be found that one of the two gives better pictorial balance than the other; while the presence of any mechanical blemish—scratch, pinhole—on one negative allows us to utilise the other without having previously to undertake any troublesome retouching.

The picture "Autumn Sunshine" is a straight enlargement from one element of a 45 x 107 millimeter negative and, without claiming any great pretensions to pictorial merit, shows the possibility of making quite fair-sized enlargements from very small negatives. In another way, too, it illustrates the point I wish to make, since, owing to an unfortunate accident, the original negative fell in the darkroom and the other half was smashed to atoms. I can only guess what the stereoscopic rendering would have been like.

The other illustrations give an idea of the scope of this size camera, the beauty of the definition, and the appearance of contact prints. The square format seems in some way to make the inherent smallness of the pictures less noticeable; in fact, they compare very favorably with the Vest-Pocket size. If the normal white border is cut down to the 1/16-inch or less, the highlights are not "killed", as is usually the case, and a very pleasing album can be made.

The use of a stereoscopic camera for single pictures is, of course, a thing quite apart from its normal function as a twin-lens instrument and in nowise interferes with the latter. For several years in succession, I carried on holidays a 2½" x 3½" folding plate camera *and* a 45 x 107 millimeter stereoscopic camera—with the consequent duplication of plates, plateholders, screens etc.—before I realised that the diminutive stereoscopic negative was capable of yielding just as pleasing enlargements as its more cumbersome opposite number. The convenience of having with one, on treks abroad—where constant fresh supplies of satisfactory negative material are, to put it mildly, problematical—a *really* small camera, taking extra-thin plates, can scarcely be overestimated. No holiday is likely to present a succession of scenes all of which will gain by a stereoscopic rendering; but certainly no tour will pass without occasions which simply cry aloud for their representation in relief.

As weight will usually be in such circumstances a consideration, it is worth noting that there is no necessity to use the entire 45 x 107-millimeter plate for single pictures. The shutters fitted to stereoscopic pictures are constructed so that they admit light simultaneously through the two lenses to the two halves of the plate. If, however, one lens is capped, only one-half of the plate is exposed and the other half can be utilised later on a different subject. But don't do as I once did—neglect on the second occasion to cap the lens through which the first exposure had been made!

That manufacturers of stereoscopic apparatus are alive to the single-picture capabilities of their cameras is demonstrated by the fact that, in many of them, the gap of ¾-inch between the pictures, already referred to, is very much lessened. The space, in the 45 x 107-millimeter Gaumont Stereo-Block-Notes, for instance, is reduced to ¼-inch, so that each picture instead of being 1¾-inch square is 1¾ x 2 inches—a shape which is much more amenable to trimming without waste in the enlarger. This increase in size of the pictures forming the stereoscopic pair is limited to their use in single-picture work, since, for optical reasons, the 1¾-inch square size cannot be increased in purely stereoscopic work.

In the choice of a 45 x 107-millimeter camera, the amateur must be guided by the work he desires to be in a position to perform. If single pictures are the main objective, a focusing-model is desirable: if stereoscopic work is the primary aim, the less expensive fixed-focus kind is preferable. When one remembers that the focus of lenses currently employed in the 45 x 107-millimeter camera

(Enlarged from one half a 45 x 107 mm. negative)

AUTUMN SUNSHINE
T. H. SCANLAN

is 55 millimeters ($2\frac{1}{4}$ inches), it is easy to appreciate that even at such large apertures as F/4.5 and F/5.6 the depth of field is enormous—at the latter opening on a fixed-focus camera, from about twelve feet to infinity—so that the use of a diaphragm is a comparative rarity. In purely stereoscopic work, therefore, a focusing-adjustment has a very limited application, since all planes, near and distant, must be registered sharply to yield a pleasing result. In single-picture work, on the other hand, such an adjustment allows one, by throwing the subsidiary planes out of focus, to concentrate attention on the main subject. It is true that good composi-

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tion, the effect of atmosphere on distance-tones, and reasonably correct exposure and development suffice in most instances to give a satisfactory enlarged result, even though the original negative has been made with a fixed-focus instrument. The pictures illustrating these notes have all been made with such a camera.

The provision of a focusing-adjustment to a stereoscopic camera adds more to its cost than any other refinement. At first glance it is difficult to see why this is so. We must appreciate, however, that the shortness of focus of the lenses used demands extreme mechanical precision in their fitting. Even the most perfectly constructed focusing-adjustment will in time develop an amount of "play", which, if negligible in large sizes, will suffice to destroy the pin-point sharpness of definition which is an essential of the 45 x 107-millimeter-negative. The long, narrow shape of this format, too, is a fruitful cause of disappointment when a loose or imperfect focusing-device, worked by the usual rack or pinion, has been made use of. The negative when developed will sometimes show a falling-off in definition at the end of the plate further removed from the opinion, caused by "lag" of the camera-front. As pointed out already, each worker must be guided in his choice by the circumstances of his own case. My advice, based on experience, would be to choose the fixed-focus camera, unless focusing is a *sine qua non*, and in that case to acquire an instrument in which the lenses are fitted with focusing-mounts, coupled by a rod, to ensure identically corresponding movements. The modern, all-metal fixed-focus stereoscopic camera can be relied on in all climates and all conditions of weather to give impeccable definition and so lay the foundations for successful enlargement.

The fact must never be lost sight of that subsequent enlargement lies at the back of the small picture, and all the mechanical operations must be carried out with that object in view. Exposure must be ample, so that the whole area of glass has at least a slight deposit of silver, and this condition applies with equal force to enlargements on paper from single pictures and to stereoscopic transparencies from the two negatives combined. Overexposure may have the disadvantage of slowing up printing, but unless of a gross character will do no harm. Development should be kept on the short side to give thin—but detailed—results, and an acid-fixing bath should be used. To reduce the handling of plates to a minimum, I am a devotee of the tank; and the likelihood of pinholes and development marks will be considerably reduced if the plates are put only into every other groove. It must not

be forgotten that, while with single pictures a mechanical blemish may be neglected by using part only of the faulty picture, in the case of a stereoscopic transparency the *whole* of *both* negatives comes into question. This naturally entails very clean working at all stages of preparation.

For the benefit of the large number of amateurs who have never done any stereoscopic work—and perhaps have never even seen a transparency in a viewer—it is probably advisable to make clear that, as far as stereoscopic prints are concerned, the stereoscope, through which the positive transparencies are viewed, replaces the enlargement of the one-lens paper print. When a negative of life-size objects is made with a lens of, say, 55-millimeter focal length, and a positive version of that negative is examined in a stereoscope of the same focal length—*i.e.*, the ordinary stereoscope that may be brought anywhere—the resulting optical impression is enormously magnified; in fact, all the objects reproduced appear to be the same size as in nature. When to this is added the fact that they all appear in perfect relief, it is easy to see why the stereoscopic process is productive of so much enthusiasm among those who practice it.

It is my hope that these notes may suggest to others a revision of current ideas on small cameras. Since, as we have seen, we can unite in a 45 x 107-millimeter camera of very small weight and bulk an instrument capable of doing excellent work in two totally different directions, this is a factor which cannot fail to be taken into account when the question of buying a new camera is under consideration or a likely bargain is "spotted" in the second-hand columns.

Big Game Photography in Canadian Wilds

EARLE W. GAGE

THAT band of camera-hunters who stalk the denizens of the wilderness, exercising rare patience and perseverance that we may have photographic records of the animal life of the American continent, are continually confronted by thrilling experiences which are not common to the ordinary picture-maker. Shooting wild life with a camera provides thrills which are unique; and it is strange, indeed, that a larger number of folk have not come to follow this pastime.

No longer is it thought necessary to journey to far-away India or Africa in order to witness the thrilling spectacle of wild animals roaming their native haunts. Right here in North America we have one of the world's largest remaining natural pastures. Canada alone, for example, boasts more than five hundred million acres of primeval forests, her herds numbering such marvelous animals as the lordly bull moose—monarch of the American forest—deer of several species, caribou, and a score of other smaller game. Our own New England possesses herds of these same animals, particularly the famous woods of Maine.

Marvelous in variety and unspoiled in the glory of their haunts, the cameraman finds a multitude of opportunities to catch and record beautiful scenes of the wilderness such as are offered by no other pastime. With the perfection of modern high-powered deadly firearms, there is no longer a thrill to the real sportsman in killing helpless beasts; while the cameraman, obliged to outwit the denizens of the forest in their native haunts, now stands in the forefront of those who help resuscitate chivalry and fair play. He has restored the old-time equality of chance, extending to animal life an even break, and enjoys a sport as fascinating as it is valuable.

Frightening detonations and fearful destruction are not his aim. Success has for its basis the close approach to wild creatures without being seen, heard, or scented. Instead of snuffing out life, the cameraman labors hard and unselfishly to preserve permanently the best of records. "Weapons" he also carries—but more powerful than rifle or gun. A single "shot" with the camera embraces whole herds, landscape and all. In short, he participates in a romance worthy of inscription in the annals of artistry as well as of bravery. But real works of art, in this particular field, Nature only concedes to those who are masters in the pursuit. Instead of heads, hides, and bones, they display photographic "trophies" with even more justifiable pride.

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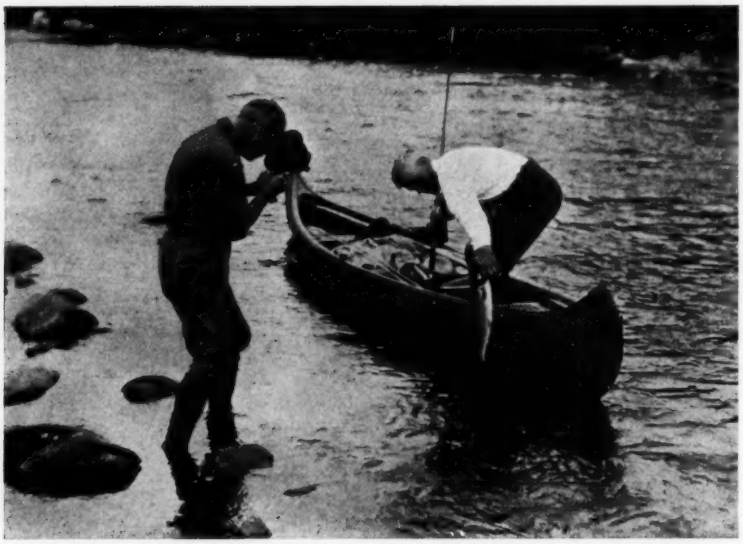

Courtesy of Canadian National Railways

PHOTOGRAPHING A MIRIMICHI RIVER SALMON — EARLE W. GAGE

Let us push into the heart of the Northland—way up into the Canadian forest, where abound a host of wild animals. Overhead the moon rides full, its stream of pallid light unsullied by stray clouds, as two men push deeper and deeper into the wilderness, following a trail that gleams white in the silvered rays of the moon. The sky is studded with gems of golden stars that flicker and twinkle as only stars in the Northland can —they seem to be so near and yet so far away.

This is an old animal and Indian trail the men pursue; it stubbornly resists the encroaching march of the forest; it is one of those trails which are uncovered now and then amid the depths of the bush and used by man, when he passes this way, and by animals alike. The sly, furtive folk of the forest evidently use the trail, and, as the men tramp on, they are able to read from the tracks that a fox has passed this way; a weasel, farther along, has entered in pursuit of a luckless rabbit; a porcupine—"hog of the tree tops"—recently crossed the trail, doubtless on some moonlit foraging expedition. But a few minutes before the noise of the footsteps of the camera-hunters broke the stillness of the night. By night the hunter's moon, tilted like a silver horn in the sky, listens to the beat of countless thousands of wings, the honk of geese, and the long-drawn whoop of the snowy cranes as they hurry southward.

The man who pushes silently on ahead, treading the hard trail as silently as an Indian, is Bonnycastle Dale, one of the world's great hunters, whose "silent shots" have permanently preserved the likeness of nearly every denizen of the Canadian forest wilderness, that posterity may, in the centuries to be, when wild life is no more, familiarise themselves with the sort of strange animals that once infested this continent. Behind, toting his share of the supplies, plods the assistant, likewise an experienced woodsman. Thanks to Mr. Dale's thrilling stories of his encounters in many parts of Canada, Laddie, his assistant, is now nearly as famous as the Prime Minister of Canada.

Shooting wild life with a camera insures to the outdoor lover and true sportsman thrills which can never be known to the man who packs the high-powered rifle, according to Mr. Dale, who has experienced the keen delight of tracking down nearly every furtive member of the forest family. Patience and perseverance supreme are required in this work, plus exceptional cunning in outwitting the wary individuals of the big woods.

"You remember that big bull moose we saw going across the river?" Laddie asked Mr. Dale, as they were seated beside the campfire, smoking pipes of peace. "Well, after I left you I crossed the Nipisiguit near Bathurst in the darkness and slipped the canoe noiselessly ashore, as I knew that both the bawling old cow and the snorting bull were in the pole spruce somewhere, and I wanted that bull with the rifle before the season was over in New Brunswick, to give our friends a bit of meat; so I threw the box (camera) over my shoulder, then the binoculars, then the rifle-strap, and, with the closed big brass tripod in my hands, I started to walk down the muddy trail. The spruces were so far extended over the bark sunken wild-animal path that they kept slapping me in the face, hiding the sounds of animals and the forest-noises generally.

"Soon I knew by some crashing and stamping that the bull moose had scented me and that I was not going to get over to my brush 'hide' on the barrens without running the gauntlet a bit. The cow went 'E-e-e-e U-u-u-u R-r-r' behind me. In front the bull snorted, and I swiftly grabbed my rifle and made ready—he was so close I could hear him bubbling over in his anger. It was full time for me to get away out of that. I had never intended to get in between him and one of his consorts.

"Now this polygamous old beast came splashing and roaring along the narrow dark trail, and I parted the poles and slipped through and made a sneak off to leeward. Really, there was but slight wind to help or hinder", recounted Laddie.

BULL MOOSE PHOTOGRAPHED WHILE DRINKING EARLE W. GAGE

"Soon, in his anxiety to hold his new mate, he abandoned the chase of me and went back to the cow. I ran out onto the barrens and crouched down in a bit of ragged spruce and waited for daylight. I was a little peeved at the bull moose for putting my wind up. The big red sun finally popped up over the eastern savannas and millions of tiny millers arose to dary their wings—and out came the cow moose, right out of the end of the trail near to me, and slap right behind her came the yearling calf, and bang into its rump the old big bull!

"The cow ran straight for where I lay

Courtesy of Canadian National Railways

THE FOX FAMILY EARLE W. GAGE

hidden, never seeing me once. She passed, and the calf lumbered along, and the short-sighted bull came straight on. The light was too poor for a snapshot, and I just had to kill him. Ping! spat! went a 303 bullet into his spine. Up! Up! Up on his hind legs he rose! Up! Up, until his horns were out over his golden brown back—over and over until he fell smash, right into the black muck. He finished his back somersault dead as a herring with his horns deeply driven into the earth."

But the occasions are not so very numerous when the camera-hunters are cornered, and find it necessary to kill instead of make silent shots of the denizens, large or small, of the Canadian wilderness. Wherever possible the camerman locates his "hide" in the brush beside a trail, to permit obtaining intimate photographs of the animals in their natural habitat, with that "at-home" atmosphere which insures accurate delineation of the wily fox, wary black bear, sly wolf, or monarch moose.

Mr. Dale was asked what he considered his closest call and most thrilling experience, picked from many years' experience in all parts of Canada. For a moment he gazed intently into the campfire and puffed his pipe. Then he said:

"It was a common marsh hawk that put one of the greatest scares into us. We had traveled many thousand miles since Laddie, to save his life, was obliged to kill the old bull moose which had sunk its sharp horns into the barrens of New Brunswick. We had even pictured the great cats of the Canadian Rockies, the 'panther', the 'mountain lion', the 'cougar', as they are variously termed. Whale and sea-lion, bear and shark had left us uninjured, if, at times, a bit nervous. For instance, that time when I was paddling the canoe, with the body of a great shark that hung half-floating, half-sinking, half-dead and half-alive, on an inch line behind, and a depth of fifty fathoms of clear green sea water down below! Not a thing had attacked us, all had been afraid of that dark figure of Man, who goes all the time erect—on his 'hind feet'—in the fighting attitude which animals assume in extremities.

"But here we were, back at the Atlantic Ocean again, after facing all the so-called perils of the Pacific region. A simple heap of branches and twigs and leaves and moss at our feet held three young marsh-hawks which yapped with open mouths, thinking. no doubt, that Laddie was going to fill up those red cavities with some nicely regurgitated fish.

" 'Look out!' I cried. The mother hawk, sailing and circling overhead, had uttered a shrill whistle, and down the air she fell like some avenging fate, straight for the boy's bright, upturned eyes.

"Slap! she struck—but in that instant of time Laddie had raised the big boxlike camera up above his head and had tumbled ingloriously on his back right into a ground hemlock bush that grew beside him. Up sailed the great screaming hawk, and up jumped Laddie.

"I feared to look lest he wipe his eyes, a sign that she had struck those eight long, razor-sharp talons in. No! he was totally uninjured. Yet so swiftly do these big birds of prey sink their cruel talons in that he and I have stood and watched an eagle strike down a wild goose in mid-air; and so rapidly were the feet let down and the needle-sharp death-dealing talons sent into the brain that we argued for a moment whether the bird had struck with bill or foot. But the rivulets of blood that coursed down over the great goose's bill answered that, as the bird fell into the sea. All these birds of prey, the hawks, the owls, the kites, the gyrfalcons, have lancets of death, hidden often by their feathered legs and feet."

Adding more spruce to the campfire, and refilling his pipe, Mr. Dale, contemplating his many close calls in the wilderness, a half-million square miles in area, stretching from Atlantic to Pacific across Canada's great domain, selected other experiences as thrilling in the extreme.

"We have had nerve-racking chills run down our spines while doing seal and sea-lion, work, too—not that any of the beasts of the field or the mammals of the sea will attack man if they are not pursued or annoyed", he explained. "Never, excepting that demon swordfish, that dynamo with a three-foot live bayonet on its charging end, keyed up with the most savage temper of anything that swims. Tortured for an instant by a lily iron or spearhead sunk into his great body, he will send that blade of his, while traveling at tremendous speed, through anything pierceable. I have known him to attack the dory of a fisherman along the Nova Scotia coast and, after sending his great, white bony sword through the spruce planks amidships, to draw it out—after the affrighted fisherman had scrambled into the stern—and to send it in again ker-slap! right through the bottom, all too near that shrinking man!"

"But I started out to tell you about our sea work", continued Mr. Dale. "One of the crew of the salmon traps had taken a harbor seal alive in a net and had thrown it into a big scow. 'Keeping it for the Nature Chap', he said. No sooner did I paddle into sight, in my sixteen-foot, cedar-board canoe—a light, thin craft which I used, as I could leave the seashore and paddle up the rivers and lift the canoe from pool to pool *en route* up the half-dry streams—than the fellow howled, 'I got somethin' for you!' So I paddled over.

"He fell on his knees and dipped his arms in under the deck of the scow, just as Laddie scrambled on deck out of his craft and snapped the scene with his camera. So far, so good. But what did that bally salmon man do but drag the big, kicking, struggling 200-pound seal to the side of the scow and drop it into my canoe!

"The instant it struck, I had my paddle up defending myself; for these big semi-amphibious beasts have great teeth and I knew how they can rag a salmon all to fringes. But the poor frightened seal no sooner struck the hot bottom boards of the boat than it made a noble arch of itself and plunged, with a rasping, howling bark, over-side into the cool green sea—and I said things to that salmon man!"

"We have had bigger seals", explained the camera-hunter. "There are the 'horse-faced' fellows, which weigh several hundred pounds, and which follow us for miles closely behind our craft, grinning at us with that old skull-like face of theirs. They are the most inquisitive thing that swims the sea.

"But it remained for a great-horned owl—in a year when the mammals of all sizes had run off before us, never heeding the wish of our hearts that they would just attack a little bit so that we might get a picture—to send Laddie, my assistant, home wounded, hastily calling for the bottle of medicine with which we wash all wounds and sterilise them.

"Laddie had been up a huge birch—a yellow birch really, a fine big tree. In a fork of a branch, a couple of great-horned owls had built that flat, insecure-looking nest of theirs. Laddie had been above it, and had pictured the nest one day while it had two eggs in it, and he had returned this time to picture the two fluffy-looking youngsters that yapped on the flat platform.

"Intent on his work, Laddie had vainly tried to watch the huge mother bird as she sailed and complained above him. Once he saw her about thirty feet off in a line with

Courtesy of Canadian National Railways

A CUB PHOTOGRAPHER EARLE W. GAGE

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TWO MUSK OXEN ON DEFENSE EARLE W. GAGE

the lens of his camera—then! the next thing he knew she had struck him, sinking six of the eight long, sharp, white talons into his shrinking flesh—so swiftly was the noiseless attack and departure done that she was thirty feet off on the other side of the tree before Laddie felt the sting of her claws.

"Swiftly he bared his arms. Yes! There were six bleeding wounds, and, fearing infection, Laddie rasped his way down that big bole and raced for home. But, as the old saying goes, 'All's well that ends well'; for Laddie's arms healed and soon he was away swinging at the end of a rope over a bird-breeding ledge on Bonaventure Island, Quebec, with a score of thousands of gannets, murres, puffins, auks, petrels, and gulls sitting 'waiting to have their picture took'. "

Yes, there is romance in every inch of the trails throughout the big woods of Canada. Not even the trapper—that silent, untiring individual who haunts the snow-covered trap lines during the frost-bitten months like a winter wraith—knows to the full the graphic stories which are written each night by the furtive dwellers he seeks. The hunter knows little of these thrills.

Outdoor portraiture, particularly in the northern big woods, calls for special care, which does not always obtain to the south. In summer and early autumn the light is usually very good, save when rainy weather prevails and clouds hover over the sun. However, such a season is one in which the camera-hunter will wish to hug close to the camp, since travel is exceedingly uncomfortable through the drenched bush.

The wise choice of back-grounds here, as elsewhere, is vital, though in catching denizens of the wilds we cannot always have a choice. Nevertheless, a set-up may well be made in a region which insures the best sort of background. Where there is rivalry between the animal or bird and the surroundings, or where the body of the animal or bird is mixed up with a quantity of detail, it is impossible to obtain a satisfactory picture, especially if the shot be made at some distance. Heavy woods are good when sufficiently far away to be out of focus, thus obviating distracting details. But often trees that let through blobs of light must be avoided.

Hence, in this work, it is a safe rule, according to the men who have spent years in the northern woods, to keep the subject and background as far apart as possible, save where the shadow of the subject is required on the background. In snapping such subjects as moose, caribou, and deer, it is usually more easy to catch the subject at the edge of a lake or river than to stalk it down in the backwoods. This insures the finest sort of background, since water, next to sky, makes an ideal background.

Outdoor cameramen seemed agreed that, for close work which will insure a delicate picture, night work insures the better picture, though demanding the utmost in patience. A flat-bottomed boat may easily be rigged up for night-flash work, permitting the camera-hunter to draw up close to the scene. A tripod camera is placed in front of the hunter's seat; about twelve inches back of it is placed a support to hold the flash-pan, the cap arranged at its center to ignite at a pull of a string. The spotlight is placed on a stake, elevated about one foot above the bow of the boat. The scene of the picture-making is reached just after sundown, to insure a good location near a point where deer, moose, or caribou are known to come to eat lily-pads and roots, and the desired distance is obtained by quietly paddling instead of rowing.

By following a few simple rules, almost any camera-lover may obtain wild-life pictures which will be the pride of the owner. The camera should be carried, while journeying through the forest, attached to your belt or about the person, so that, when the right moment arrives, you will have it in readiness. Wherever possible, rest the camera arm or body against a tree or some stable object. If pressed tightly to the body, be sure to hold the breath while the exposure is being made;

Courtesy of Canadian National Railways

DEER IN JASPER NATIONAL PARK — EARLE W. GAGE

with a little practice, it is possible to make pictures up to a full second without shaking the camera. Remember that, even when the shutter is working at high speed, any movement during exposure will be sufficient to blur the entire picture.

The length of exposure varies within wide limits, and the beginner should consult an exposure-meter, or keep a record of results for future reference. Every experienced camera-man appreciates that these are facts which experience will develop to an acuteness no rule can establish. It is best to stop down lenses and give a longer exposure if the action will permit, since this gives a more pleasing record of the incident and a more sharply defined photograph.

It is a mere waste of film to photograph high-speed objects in a poor light with the lens working at a smaller aperture than F/8. The nearer a moving object is to the camera, the shorter must the exposure be to prevent blurring. If one-fiftieth of a second is correct for an object at twenty yards, at forty yards the time may be increased to one-twenty-fifth of a second. For the average lanscape, better results may be obtained if an exposure of one-twenty-fifth is used, and the lens stopped down to F/11 or F/16. An excellent way to get a line on your view before an exposure is made is to squint, or half-close, the eyes; this will give a very fair idea of what to expect in the finished picture.

If you are using a miniature camera, remember in judging distance that the shorter the distance the more important should be the calculation of the same. Avoid making a picture with the sun directly behind; while a flood of too much light straight down, or nearly so, on the body of an animal results in a poor picture. The most pleasing results may be obtained in forest work with the sun at an angle of about forty degrees. It you shoot with the sun reflected in the camera, it is necessary to shade the reflection off the lens very carefully. Clouds require about one-

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eighth the exposure of the foreground in an open-forest landscape, and both are seldom reproduced well without the use of a color-filter. A direct view-finder will assist in properly lining up and getting action-pictures that you would lose with the regular finder.

A good way to obtain unusual animal and bird pictures is to fasten the camera firmly to some stable object, such as a stump or large rock, focus on the spot desired, attach strong white thread to the exposure release, and wait a short distance off for the denizen to appear.

As I have repeatedly explained, it takes a great fund of patience and much perseverance to shoot good animals and bird pictures; but what a "bag" we can boast of, which for years to come will bring fond recollections of the hours spent stalking these denizens of the wilderness, lakes, and rivers!

How I Cut Wastes in Making Pictures

A. H. GERBAZ

AS an amateur, making pictures for pleasure, I blundered into five very common, wasteful mistakes of amateur photography; and later as field editor of a Western farm magazine, and amateur photographer for profit, I cut to a minimum, or in full, these mistakes which made me lose money.

The five most common picture-making failures of amateur photographers are incorrect exposure, improper distance of focus, background or foreground not in harmony with rest of picture, wrong picture-sense, and inefficient manipulation of camera.

Incorrect exposure has considerable to do in producing inferior pictures, which pictures are more or less a waste of time, work, and material. The causes are a lack of study and skill in using correct stop, resulting in overexposure or underexposure, as well as using snapshot exposure for what should be a time exposure; moreover, another incorrect exposure factor is wrong shutter-speed with specific stop used.

It must be remembered, for practical purposes, that there are only three possible exposures, these being overexposure, underexposure, and correct exposure. A personal error in exposure can be given as an example here. I had attained a mountain altitude of 13,000 feet, with a vast panorama of mountains all around me. It was a chance of a lifetime to obtain some real worth-while scenic pictures. With the aid of my exposure-meter and tripod, I made twelve pictures. Later, the pictures were developed, with the result that only 25 per cent. were correctly exposed, and 75 per cent. were a waste of film due to overexposure. I had failed to take into account the factor of less exposure for high altitudes.

My inferior picture wastes caused by incorrect exposure have been largely or totally eliminated by heeding the following rules and observations:

1. I have learned the limitations of camera by study of exposure-scale, different exposure-tables, all information on exposures, together with exposure-notes.

2. I have made test-exposures under different light and other conditions.

3. A tripod is always taken along to make time exposures. In emergencies, I have made time exposures up to one second by holding camera in my hands, as with snapshots. However, it is not often possible to hold the camera steady enough for exposures over 1/5-second.

4. Two pictures of the same object, with two different exposures, have been made when I was not sure of correct exposure and the subject was of extreme importance.

5. I have found the higher-priced and higher-class exposure meters 100 per cent efficient for time exposures, especially indoor pictures. These meters cover a vast range of light, from moonlight to brilliant light, and very fast shutter-speed.

Wrong shutter-speed also comes under incorrect exposure. My picture wastes in this have been of frozen waterfalls in summer, an impossibility in reality. This is a result of too slow shutter-speed. Another waste was snapshots of a gas-shovel working on a snowy day. The dipper of the shovel looked like a comet with a tail, as shown in pictures. I had shutter speed of 1/5-second, instead of 1/25-second, for a moving dipper filled with dirt.

Out of nine pictures, I wasted three by wrong shutter-speed.

I have cut wastes by—

1. Never snapping a waterfall or fast-moving water with slower time than 1/50-second.

2. I do not attempt to photograph auto-races, fast trains, and other very fast moving objects with a camera having a shutter-speed limit of 1/100-second.

3. For ordinary form machinery in motion and other moving objects of ordinary speed, I never use less than 1/25-second, with 1/50-second and 1/100-second as choice shutter-speeds for these moving objects.

Improper distance of focus is caused by incorrect setting of focusing-indicator on distance-scale. This in turn causes the principal object to be out of focus or not as clear and sharp as the rest of the picture. I made two different pictures of a car on a homemade greasing-pit. One picture was shot at 15 feet estimated distance, and the other at 25 feet measured distance. The picture shot at 25 feet measured distance was much the sharper of the two for the auto and greasing-pit, the principal objects of the picture. This was the correct focus for the picture.

By observing the following rules, I have cut down wastes caused by out-of-focus pictures.

1. Estimate only longer distances, but measure shorter ones; distances up to 25 feet should be stepped out to determine where to set focusing-indicator on distance-scale.

2. A reasonable-priced distance-meter has given me 100 per cent effective focus pictures.

Lack of regard for background or foreground of the picture is another common failing of amateurs, which wasteful failing was also my lot. This lack of harmony of background or foreground to rest of picture was revealed to me at its fullest extent when an editor returned a print of an otherwise beautiful farmhouse. This kind editor pointed out to me that the fence in the foreground showed up too prominently, thus spoiling the effect. Improper background or foreground also includes harsh objects which distort the view, as telephone and telegraph poles and billboards, and other objects forming ineffective contrast; as, for example, ramshackle buildings in a picture not depicting a ghost-mining camp, but supposed to represent a palatial mountain-home.

To cut these wastes, I have observed two rules:

1. If object distorts view, make pictures from a different position, provided that will eliminate object not wanted in picture.

2. Do not make picture if ineffective background or foreground cannot be eliminated, but find a suitable substitute for the picture.

A veritable stumbingblock for amateurs is lack of picture-sense. This makes the cost of pictures mount up. In the unskilled amateur class there are many pictures which should never have been made. It is quite easy to aim a camera and shoot at the first object or scene which comes in sight. But a picture with picture-sense is quite another matter. I have made inane or unimportant pictures of objects just because they were handy. A large rock, just because it was the largest in the community; a bridge, just because it was the handiest bridge, and I wanted to get a bridge in my collection of pictures. Instead, I should have sought out the most unusual bridge, the highest, or longest, with picture made at an unusual angle. The cause of this lack of picture-sense is a deficient study of picture-values.

To avoid waste in making pictures with lack of picture-sense, I ask myself the following questions:

1. Should picture be made? Why?

2. If picture should be made, how should it be done?

(*a*) Far view or close-up?
(*b*) What position or angle of shot?
(*c*) What angle to sun?
(*d*) Cloudy or clear sky?
(*e*) Morning or evening?
(*f*) Sunset or moonrise?
(*g*) Twilight or moonlight?
(*h*) Winter or summer, spring or fall?
(*i*) Sharp or diffused?

Then, there are other picture-values which make picture-sense, but these can only be acquired by study and experience. A very common error of amateurs is incorrect manipulation of camera, which wastes negatives and prints, owing to fogged effect, improper position, and superimposing of exposures.

The most common cause of fogged exposure is due to the sun shining in the lens. Once, I made an otherwise excellent picture of a group on a high mountain-pass, except that the print was fogged at one corner, thus obscuring one of the group, on account of the sun shining in the lens.

Two rules have sufficed to cut this picture-waste:

1. If picture is shot against sun, shade lens

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with hat, cap, camera case, or by a person standing near the camera; or, better yet, by a lens-hood. In obscuring the sun from the lens, care must be taken to not let the object shading the lens obtrude itself into the lens.

2. Do not make picture against sun, unless there is a purpose.

Other causes of fogged exposures due to manipulation of the camera are that the camera moved in making the picture, or that the object itself moved during exposure. A camera can be held very steady by directed practice. The object photographed should not move, or if it is necessary that it move, an appropriate shutter-speed should be used.

Incorrect position of camera is a common blunder of beginners as well as amateurs. Incorrect position may be tilting the camera sideways, making a lopsided picture; or tilting it upward to get a tall building or object, with resulting grotesque exposure. Then there is a vertical picture-finder position for a horizontal picture, a vice versa; also, making a vertical view-picture when a horizontal one would have been better, or vice versa.

Correct position of camera is not a difficult thing to attain. It is a question of right thinking, judgment, and discrimination. It need hardly be repeated that a camera must be held as level as possible, forward and sideways, and that one should not cut a building in two with a vertical picture when a horizontal one is intended. When in doubt between a horizontal and vertical view exposure, use the former, provided the whole object can be photographed. A horizontal view negative and print can always be trimmed to achieve vertical view effect, whereas an object cut in two or left out of a vertical view is left out for good.

Another waste in the manipulation of a camera which all amateurs have experienced, at one time or the other, is piling one picture on top of another or superimposing of exposures. This failure is due to lapse of memory or interruption just as the picture is snapped. There is, also, lack of order in turning the film over after it has been exposed. This piling of pictures produces a monstrosity resulting in absolute waste of film, besides the picture itself. Some cameras have an automatic device to turn the film over just as soon as it is exposed; but most must be turned over by hand. Two of the best objects that I ever photographed were lost in this way. I made a picture of two cars coming down a hazardous, lofty mountain-pass highway in spring when there was considerable snow on the road. The snow-banks on the upper side of the road were much higher than the cars, and the lower side of the road had snow, too. I snapped a picture of this scene of road, snow, and automobiles. Then we descended until we came to a snowslide, through which a road had been blasted. With one car in the middle of snow cut with snow banks thirty feet high on the sides, I snapped another unusual picture. The result of these two pictures was a total waste, because I had failed to turn over the film of the former exposure, resulting in two pictures piled one on top the other.

I have overcome this waste 100 per cent by—

1. Turning the film over as soon as the picture is snapped.

2. If interruption occurs just after snapping the picture, so that I cannot immediately turn it over, I count back pictures made on that roll, or for others, too, and calculate if the film was turned over or not.

3. If doubt still prevails, I turn the film over, preferring blank to piled-up pictures.

4. I plan pictures or exposures ahead, which saves superimposing, as well as making possible better pictures.

In conclusion, it may be stated that all these wastes, as well as others, can be eliminated by knowing how and doing the right thing. To learn how, one must experience, observe, and study.

[The repetition of perhaps well-known facts may often seem overdone, but it should be remembered that every year there are hundreds of thousands of beginners in photography who are eagerly looking for practical and helpful information. Mr. Gerbaz has pointed out in an orginal way some of the fundamental requirements which govern the making of a good picture. The advanced amateur and the professional have long known what these fundamentals are; but the beginner who may have purchased his first camera only a month or two ago has no knowledge of these important requirements. We remember our own beginner's problems. We feel that we should include material which is stimulating and inspirational in character, as well as the more practical facts which are vital to photographic progress. Therefore, we feel indebted to such good friends as Mr. Gerbaz and others, who from time to time supply material on an old but ever new subject.—EDITOR.]

AMY

J. N. UNWALLA

HONORABLE MENTION—PICTURES OF CHILDREN

The Making of Pictures by Photography

Number One

CLARENCE PONTING

IN writing this series of articles for PHOTO-ERA MAGAZINE, I am attempting the difficult task of showing the evolution of the snapshooter from the record-making stage to the time when he will have the gratification of seeing his work hung on the walls in one of the large exhibitions.

There has been a great deal written about the necessity of art-training before a photographer will be able to produce pictures, and this has deterred many beginners from making an attempt to use the camera as an instrument for recording the mood of a scene in such a manner that the feeling which prompted the exposure can be conveyed to others who view the work. It is true that such a training will be a great advantage to anyone taking up pictorial photography; for it will not be necessary to learn the unwritten laws of composition, the massing of tones, and the employment of effective lightings to enhance certain subjects. On the other hand, I contend that an art-education is not an essential to successful picture-making by means of photography.

There is inherent in most people the love of beauty, whether it be in line, color, or the massing of light and shade—an instinct which tells them when a mood of nature, the grouping of objects, or a certain effect of light-and-shade is pleasing to the eye, or affects the senses in some way, enabling the photographer to convey the impression he receives to others. This instinct, however, in itself is not sufficient. There must be the urge to produce pictures, and a determination to surmount difficulties. Coupled with these there should be the willingness to learn from the work of others, by a study of works produced by acknowledged artists of both the brush and the camera. Given these attributes, there is no reason that anyone who has reached the stage when a good technical photograph can be produced, should not, in the course of time, make pictures worthy of an exhibition-wall. The little tricks used by workers who produce such pictures will be learned later, and those who follow this series of articles will find that the methods advocated will enable them to produce better work.

My pictures having been accepted by two of the world's best photographic exhibitions, the London Salon of Photography and the Salon of the Royal Photographic Society, I feel I have attained the highest peaks to which a photographer can aspire. And yet I have never had an art-lesson, and cannot tell what prompts me to make exposures which, later on, produce exhibition-pictures. Having obtained the negative, I attempt to produce a print which will not only translate the effect of nature I observed, but convey to others the motive for making the exposure. I only mention the above as an encouragement to beginners, in order to show them that if they determine to make the camera produce pictures, it will be only a matter of time before their efforts are crowned by success.

Altthough I would be the last to advise slavishly copying another's work, it must be admitted that it is a great help to decide upon a subject which interests the individual, and to study the methods employed by an expert in a similar subject. By this means it is possible to discover how certain subjects should be approached, the lighting which is most likely to prove effective, and the manner in which the print is worked up to give the impression which affects the beholder. By such a study the novice learns the difference between his own work and the beautiful prints made by the pictorialist.

It does not require art-training to enable even the dullest person to see that there is a marked difference between art-reproductions and the work of the average snapshooter. Such pictures often offend the beginner, because the microscopic details found in his prints are absent in these reproductions. He makes sarcastic remarks to the effect that their authors are suffering from myopia, because distant objects are slightly out of focus. The sooner this idea is discarded the better. It is impossible for the eye to focus at the same time on both near and distant objects in the way that is possible to a stopped-down lens. Besides, in a pictorial photograph, this full detail is rarely necessary; sometimes it actually irritates. Relative to this point, I once read a criticism of a sharp-all-over print which is worth repeating. The critic pointed out how differently an artist would have

tackled the job. He would have added color, or in photography, tone. Instead of full detail he would have given a skilful and sufficient summary—all that is necessary from the usual picture-lover. He would have rearranged certain facts, just enough to concentrate interest and to make a fine composition. This he is enabled to do as the result of long and careful study and a highly-trained artistic sense.

Again, there are subjects at present beyond his comprehension, against which the tyro will expostulate, simply because he has not learned to appreciate the beauty of mass and line, of light-and-shade. Later on a gradual change will alter his outlook, and a realisation that, after all, there is something attractive in these photographs. He may even find himself producing similar things!

Once the beginner realises that his reaction to a salon-print is one of mood, he will be on the highroad to success. As Loretta G. Burrough said in a recent issue of PHOTO-ERA: "Don't just 'take pictures'! Wait until a landscape, or a certain trick of light-and-shade on rippling water, affects you strongly. It may make you feel happy or depressed, it may please or displease you; but if it arrests your attention and creates a mood in you, try to picture it! Look very carefully to your composition; be chary of your picture-space. The mood will be lost if you try to 'jam' too many things together. Finish your picture in the medium that suits you best. If you can handle bromide best, don't try to do it in bromoil." To this might have been added: "Don't leave the work to a photo-finisher; do it yourself!" The photo-finisher cannot be an interpreter of moods; only you can put this into your print.

FIGURE 1 (ORIGINAL PICTURE) CLARENCE PONTING

Although it is quite unintentional, I am afraid I have rather run away with the "art-stuff". My original intention was to plunge right away into details which would enable the beginner to turn out better work. And then, when I remembered my early days, I thought a kind of foreword might encourage those who are under the impression that pictorial photography is only possible to those who have had art-training. This I hope I have dispelled.

And now to practical work, in which there will be no further digressions on art. I have spoken of the moods of nature which are likely to make pictures, and, in all probability, you have made exposures on subjects in

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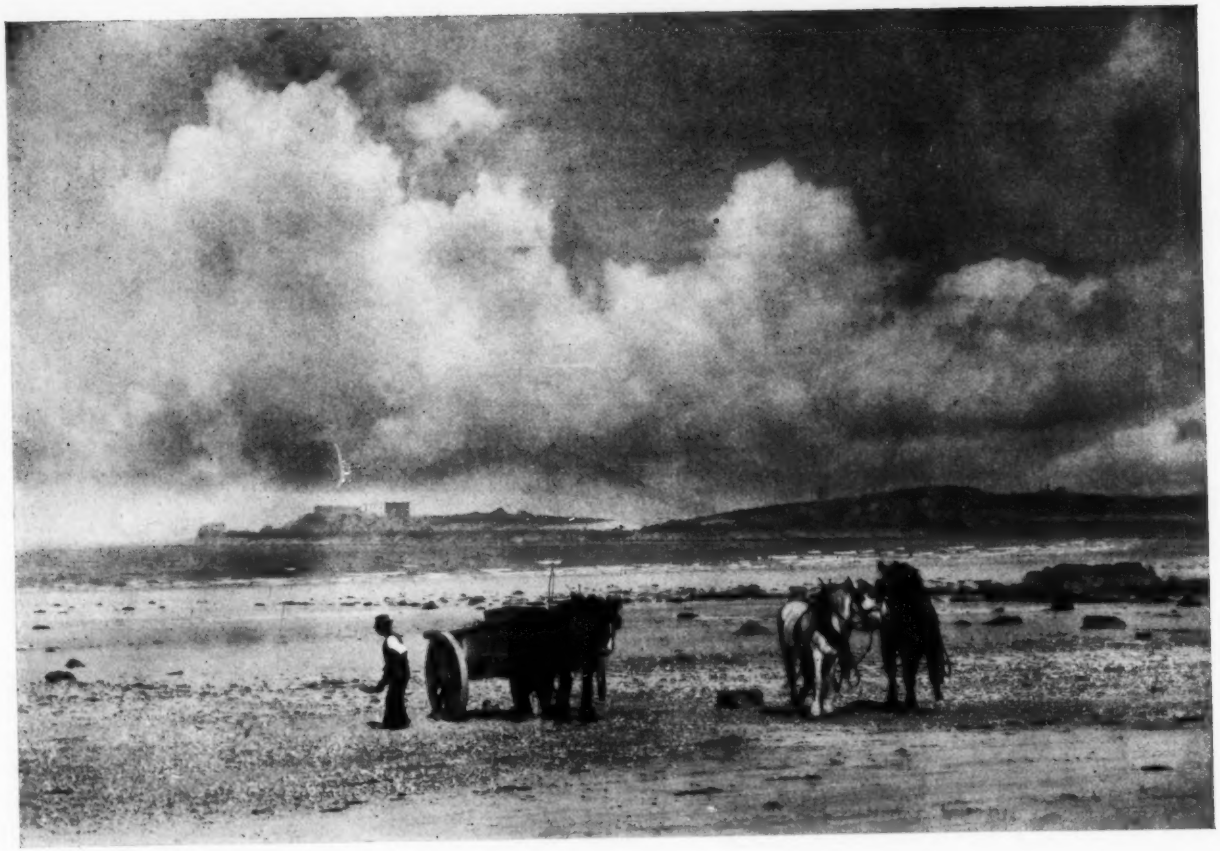


FIGURE 2 L'ANCRESSE BAY, GUERNSEY (SHOWING CLOUDS PRINTED IN) CLARENCE PONTING

which unconsciously, perhaps, you have been influenced by a mood of nature. This may have taken the form of a landscape which pleased you. The lighting and composition may have been ideal; and yet the print, as given by your negative, fails to satisfy. If it could have been possible for you to have taken your print to the photographed scene when identical conditions were present to those when the negative was made, you would have been able to do something which was omitted at the time of exposure. You would have analysed the composition and found that the cloud-forms were largely responsible for the charm of the subject, in that they helped to give a satisfactory composition. An examination of the print will show that these are entirely lacking.

I think I can be fairly safe in saying that in nine out of ten unsatisfactory landscapes, the cause lies in the lack of a sky; or the clouds, if present, are unsuitable to the composition. This is a fundamental truth which is realised by very few photographers. The addition of suitable clouds makes an incredible difference to even an ordinary photograph; in a landscape where a composition is otherwise satisfactory, the introduction of clouds just makes the little difference between success and failure. If anyone doubts my statement, let him take any of Whitehead's pictures and imagine the effect that would be produced by a print in which the sky was deleted. The print would, at once, become ordinary, because it would be devoid of the motive which prompted the exposure. This feeling may be one of sadness and desolation, or the peace of an open space at the setting of the sun, the result being achieved by the introduction of a suitable sky.

You'll notice that I say the "introduction" of a suitable sky. I don't, for one moment, suppose that a single one of those beautiful cloudscapes seen in Whitehead's pictures was present at the time he made his exposures. Such perfect combinations of clouds and landscape might occur once in a lifetime, but not with the frequency shown especially for Whitehead. Those clouds have all been made on separate negatives when their suitability was observed. Having these negatives at hand, Whitehead is able to visualise them in his mind when a composition is encountered with which one of them will combine. He is thus able to gauge the effect which will be produced in a print.

Cloud-forms being so essential to the success of a landscape photograph, the method by which they can be introduced into a print devoid of these sky-forms, or one in which existing clouds are unsuited to the composition, should be learned at an early stage of the pictorial photographer's career. The difference effected in the combined result is almost unbelievable, and, to illustrate this, I have made two straight prints from the same negative, one with a blank sky and the other with the addition of suitable clouds. The methods of forming such a combination will be given in my next article.

The Photographic Adventures of Bert and Ray

XVI—A Fall Excursion

NEIL WAYNE NORTHEY

IT could not have been a nicer day if I had made it myself", said Bert, as he sat on the workroom table and swung his feet back and forth, while he waited for Ray to check over his equipment to make sure he was not forgetting anything.

"Yeh, I surely do like these 'melancholy fall days', as the poets call them", agreed Ray. "They make a fellow want to get out and inhale some of the soft, hazy air, and just relax a while after a busy summer."

"There's just enough odor of wood smoke in the air to make it smell nice", said Bert.

"Well, I guess I have everything I'll need except a lunch", said Ray, "and Mother will have that ready for me to pick up in the kitchen. What shall be our principal objective for to-day?"

"I have been thinking it would be interesting if we tried to interpret the season", replied Bert. "In other words, let's look for pictures that express the mood and activities of fall."

"Say, that's a fine suggestion!" exclaimed Ray. "We can drive out into the country a way, and watch for pictures as we go along. Then we can stop and make short side trips afoot across fields and through woods."

Out in front of the Wentworth home, while the boys were loading their equipment into the car, Ray paused a moment to greet a neighbor, who was raking fallen leaves from his lawn.

"What could be more typically fall than such a scene as that?" asked Bert.

So after the neighbor had resumed his work, Ray secretly focused his 3-A on him and made an exposure. "If that isn't a prize-winning genre, I'll miss my guess!" laughed Bert triumphantly.

A short way down the road Bert brought the car to a sudden stop.

"What's wrong?" asked Ray.

"Nothing, except there's a chance for another picture", replied Bert.

Along the road lay a field of corn shocks, with their dry leaves rustling in the light fall breeze. On the ground in natural array lay many golden-yellow pumpkins, with their vines severely nipped by Jack Frost.

"Boy, what a picture of fall!" exclaimed Bert. "If only there were someone harvesting those pumpkins!"

"I'll play the part of a harvester", volunteered Ray.

"Good!" said Bert. "While I get out the Kawee, you may carry a few pumpkins from some place out of the scene and pile them over by that corn shock as if you were getting them ready to haul home. Then when I get everything arranged to appear natural, you can start toward the pile with a fine large pumpkin and act as if you had tripped over a vine and fallen. If it's good, I'll sell it to a farm publication next year for a cover picture."

After the picture, as suggested by Bert, had been made, the boys made another exposure from a somewhat different angle and with an effort to produce a more artistic effect.

"I hope the farmer who owns this field doesn't think we are 'cooning' pumpkins", said Ray, as they climbed into their car and started down the road again.

In a little while Ray held up his hand. "Wait a minute!" he said. "I think I saw an opportunity for another picture back there."

Bert backed the car a way and then brought it to a standstill.

"See all those baskets of apples on the ground down in that orchard?" asked Ray. "There must be someone picking apples down there. "Let's hike down and see if we can get an apple harvest scene."

Sure enough, when the boys arrived in the orchard, they found the apple harvest in full swing. It was a simple matter to arrange some baskets of apples, and a busy picker on a stepladder beneath a heavily loaded apple tree, into an artistic and natural composition, and soon the camera enthusiasts were again on their way, with another picture depicting the spirit of fall added to their collection.

"That ought to be a good one for a horticultural magazine", observed Bert.

Another mile, and the road made an abrupt turn. When looking ahead before making the turn, one could see a country schoolhouse standing exactly in the path of the road, if it had not turned. Bert drove the car out to the side of the road and stopped. The trees on each side of the road were partly devoid of leaves, and there were enough leaves on the road to suggest the season of falling leaves.

"You know", said Bert, as he sat in the car and gazed down the road, "that would make about the best picture yet, if only we had a couple of schoolchildren in it walking toward the little schoolhouse and carrying their books and lunch pails".

"It's too good to miss", agreed Ray. "I wonder if we can find some children close at hand who will pose for us. If it were not Sunday, I would borrow a couple from the school-teacher."

"Let's stop at the next farmhouse and see if we can get two or three! They don't need to 'doll up'. I'd rather they wouldn't be too well dressed. Just everyday school clothes and their books and pails. I believe it is worth trying."

Needless to say that "where there's a will there's a way", and within an hour the boys had added another worth-while picture to their group, which they felt sure would draw a cheque from either an educational or rural publication.

Photography with Bert and Ray was rapidly becoming more than a hobby. By combining the artistic with the practical, they saw an opportunity to make pictures which they believed would bring them in some revenue and thereby help to make their sport pay its own way. And so, while looking

for pictures that should offer an opportunity for artistic expression, they kept an eye open for the commercial value as well, if we may call it that.

At noon they parked their car under a large roadside tree, and sprawled out on the ground while they ate their lunch. High overhead a flock of wild fowl floated southward amid the fleecy clouds.

"There's something that's beyond the power of our cameras to get", observed the rather poetic Ray. "Sort of beyond their vision, so to speak. But there are enough things right here on old Mother Earth to keep our cameras busy if we can just see them ourselves."

"Yes, that bit of sky, with the cranes sailing along, is out of reach of us. But don't you know, if it were not for our cameras, we probably should not be here to enjoy it right now? They sort of lured us afield."

"That's right, too", agreed Ray. "Making pictures is only half the pleasure of owning a camera."

After lunch the boys left their car and hiked back into a patch of woodland, which Jack Frost had painted vividly with red and gold and brown. Several youngsters were busy gathering nuts, and did not see Bert and Ray until they had snapped a picture of another fall activity.

Down along the creek the boys spent a pleasant hour exploring for pleasing scenes, and waiting for a squirrel to return to its den with a load of winter food. At last their patience was rewarded, and just as Mr. Squirrel reached his doorstep with a load of nuts, Bert pulled the string that they had placed from their blind to the waiting camera, and click went the shutter.

Thus the afternoon passed, and only too soon the sun measured its width behind the almost leafless treetops.

"There's one more picture I want to-day", said Ray, as he and Bert strolled back along the creek toward their car.

"What's that?" asked Bert.

"It's a picture of harvest moon", replied Ray. "And this time I'll ask you to be the subject."

"I may be 'looney', but I am not a moon", laughed Bert.

In a field of rustling corn shocks, Ray stopped and set up his view camera with the lens pointing toward the glowing west, where the sun had sunk out of sight. On the groundglass Ray composed a pleasing group of silhouettes of corn shocks, and placed Bert in the foreground carrying a bundle toward a shock. With a pencil Ray marked on the groundglass the place in the sky where he wanted the moon to appear.

When everything was ready, Ray gave a short-time exposure and then walked to the edge of the field with his camera.

"Where does the harvest moon come in?" asked Bert.

"In about a half-hour", replied Ray. "I can see a light place in the east where it will come up."

While the boys were waiting for the moon to appear, Ray removed half of his lens, leaving the half that had the longest focal length. "That will give me about twice as large an image of the moon as the combined lens would give", he explained.

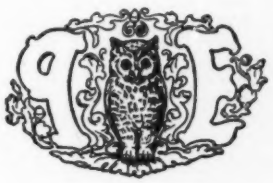
When the moon appeared above the horizon far enough to suit Ray, he focused it upon the groundglass in the position he had marked with a pencil. A half-minute exposure at the largest stop, and Ray's harvest moon picture was made.

"I could have pasted an opaque circle on the negative before printing it and got a moon-effect; but I think this will be better", said Ray.

"Yeh, you have done enough faking as it is", said Bert.

That evening, as the country folk were sitting in the glow of a mellow moon, they heard two young men drive past toward the city, singing loudly above the rattle of a none-too-new car. And who wouldn't feel like singing after spending a glorious day?

(To be continued)



XUM

Climbing Through Ash-Land With a Camera

WILLARD D. MORGAN

IN a recent picture-hunting trip through the high Sierras of Central California, near the Nevada line, I discovered an ash-land of burned-out volcanoes. In attempting to preserve some of the unusual contrasts and compositions of this region, I wound several yards of film through my camera. In the center of this land is the Lake of Mono, surrounded by many silent craters and covering crater-depths of even greater magnitude with its deep blue water. Gigantic fumaroles, pebbly pumice slides, gnarly twisted obsidian with its shining black polish, great boulders of extreme lightness, lapilli, and barren desolation appeared everywhere. I was in a land of burned-out fires—a place for many photographic thrills.

During the westward migrations of the early fifties, very few schooner-parties passed through this Mono Lake region. Even to this day, the closest railroad is ninety miles away. Miners found a few mineral ledges, and occasionally a real pay tunnel. Mark Twain was fascinated by this lake-country and spent considerable time during the early sixties prospecting in the surrounding mountains and expecting to pick up gold and silver "by the bucketful".

However, the big blue lake continued to cover its hidden secrets of a seething volcanic past. The land was now cold with occasional hot springs to prove that its undercrust was still alive. Indians came to the lake from miles around to gather their yearly supply of Ka Chiva, the larva of a certain fly which floats on the water's edge.

I knew that there was a human history about this lake which merely represented a few hundred years; but the geological history went back into the thousands of centuries. I wanted to experience this barrenness and desolation as I climbed crater after crater and shuffled through ash and pumice gravel, knee-deep.

My equipment for hiking and photographing about this region consisted of a roll-film, a 3¼ x 5½ folding Kodak with anastigmat lens, sky-filter, small folding tripod, and a gallon canteen for water. In climbing hundreds of feet, up crumbling ash-slides, the lightness of pack will be appreciated. Very few picture-hunters have left the well-traveled highways to climb the Mono crater mountains or to explore the interesting shoreline. There are no trails among the craters, a circumstance which adds to the fascination of virgin exploration. One cannot get lost, because the lake is always serving as a dependable guide for location. The pictorial photographer should find many thrilling possibilities through this volcanic land. However, I will take you over a few paths of an amateur photographer, and show the possibilities with a small camera.

Mill Creek slips into the lake from the north through a ghost-land of glistening white stumps, bushes, and piles of bleached white brush. The lake is always rising or falling, and its heavily laden brine water kills and bleaches every vegetable organism within reach. Through this bleached maze of desolation, I saw Black Point jutting out into the lake several miles beyond, gloating in its richest blackness. This was a land of black-and-white extremes, a photographer's paradise. My camera caught the contrast beautifully.

I wanted to explore Black Point and find more compositions for study. As I walked along the lake-shore, this black, sleeping volcano loomed above me in all its deathly silence. There remained only a few yards between the pumice walls and the water. I knew that the sleeping giant would wish nothing better than to force me into the foaming waters which were now lashing against his toes. Not a blade of grass dared to appear along this volcanic ash-slide which descended into the water and disappeared still farther below.

Seasonal rains and heavy winter-snows carried on a continual erosion and created long avenues of sculptured figures, gargoyles, ledges, and isolated pumice and ash pillars of a fast-ebbing life. Ash and pumice pebbles washed in and out among a cold, crumbling, lifeless fire-pot of the past. No more could the sides of this magnificent black cone be replenished with fresh lava, ash, and lapilli robbed from the bowels of the earth. Nature was now at work, changing, leveling, making ready for another life with vegetation, and even jack-rabbits. Again my camera recorded these impressions. There were so many moods, so many sculptured avenues of volcanic beauty, that half of my films were already used by the time I had finished.

I used a tripod with every exposure and a sky-filter whenever necessary to obtain cloud-patterns. By stopping down to F/22 or F/32 and exposing from one-quarter to one-half second, I was able to get better detail and to show the varying contrasts of the compositions I wanted. The extra minute in setting up a tripod is well worth the time when one wishes to get the best results from this outfit.

My next desire was to climb the face of this dormant crater-giant and show him that I was now master of this point. The miles of pumice-slopes were impossible to climb until I came to a ledge of rocks which had tumbled into the lake and afforded a precipitous ascent. I tied my camera, tripod, and extra films about my body and started over hollow-sounding boulders of congealed ash and lava particles. The lake waters boomed below; but I was finding a thrill in searching for new photographic paths.

Marvelous compositions abounded on all sides. I was able to set up my camera on an ash-ledge and focus back toward my ghost-land of Mill Creek four miles away. I included the long barren shore-line, the black slides, a large jagged formation jutting out into the foreground, combining the land with the broad lake—there was to be a black-and-white composition which would make my photographer's soul sing with satisfaction. The shutter opened and closed at F/22 in one-fifth of a second to make the record.

The remainder of the ascent was several hundred feet, which called for frequent stops for breath. Each additional foot gave me another relationship with this burned-out domain. From the summit, I looked across the lake and could see into the throats of ten monster craters, while others continued in the distance. Everything seemed to be represented in the severity of sharp lines, black-and-white contrasts, with variations found in many of the orange-and-purple crater colors. In my desire to expand my camera-studies, I was now hungry for exploration among those distant formations.

MONO LAKE, CENTRAL CALIFORNIA — WILLARD D. MORGAN

The following day, I arrived at the base of the highest crater in America, after a vigorous climb of several miles from the low-land south of Mono Lake. Indians refer to this volcano as Sleeping Lady, because of its resemblance to a lady's upturned face. From a lower crater, I was able to include Sleeping Lady, with two other burned-out craters, in my next picture. This crater-group can be reached by automobile over a good road which passes between two of the lower craters. To experience the beauty and

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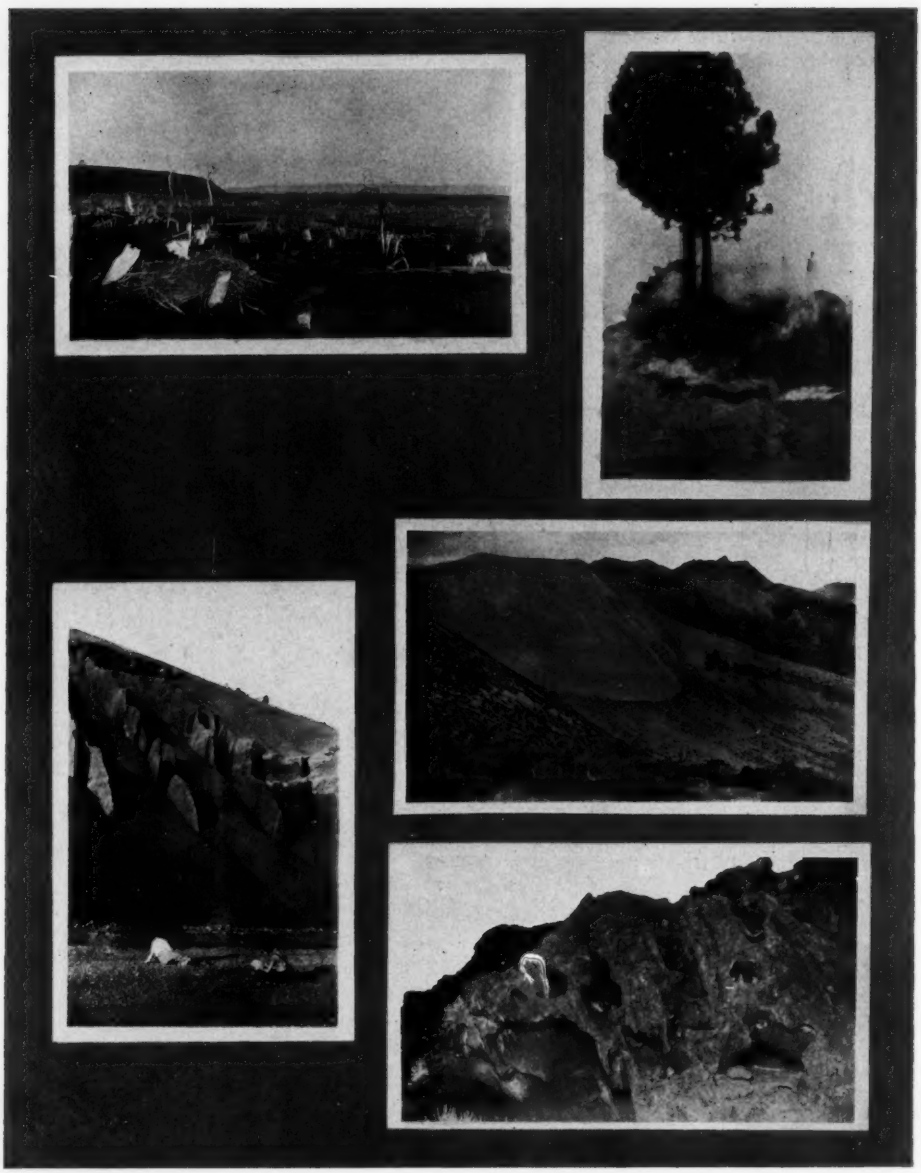

A Ghosty Shore
Slide on Black Point

Steaming Volcanic Fissures
Sleeping Lady Volcano
Weird Formations

WILLARD D. MORGAN

thrills of the highest volcanic heights, the auto must be parked to one side and the climb commenced.

I continued the climb. Everywhere there was grandeur—dramatic, still forms which were once alive with foaming rock and cinder showers. All the past seemed again to live. These forms had many colors. Straight, gray ash slides broke into orange-and-purple rock ledges. Probably an amateur photographer shouldn't become so emotional over colors and natural beauty when he cannot show it in his negatives—such experiences are left for the painter. To the photographer, compositions must build up from the balance and beauty found in line and plane.

I was reveling in my finds. New combinations, balancing, and variations were found with each new position attained. Indeed, it was an unusual place to seek beauty and pictures in this gnarled and twisted land. I peered into cold crater depths through my camera's eye. Close-up pictures showed small mounds of obsidian chips where Indians made arrowheads among the huge chunks of twisted obsidian glass in crater-bottoms. Then, turning the camera toward the broad lake, fifteen miles across, I was able to include the volcanic islands of Paoha and Negit in another picture.

I tramped back down the valley through the evening light, carrying the filmed interpretations of a photographer's journey. New thoughts, emotions, and compositions had been opened to me. I drank them in; negatives served to record them for others.

There are four direct automobile routes to Mono Lake. The northern road comes down from Lake Tahoe; the eastern, from the Nevada district, through abandoned mining-towns and desert. The southern route passes through the Mojave desert and Owen's Valley, while the road from the west is very picturesque—over the Tioga Pass and high Sierras from Yosemite. At Mono, a little town beside the lake, there are excellent accommodations for campers or visitors. Other picture-attractions will be found at Lundy, an old, abandoned mining-camp where Mark Twain had a cabin and prospected. Smaller Sierra lakes and cascading streams may lure the fisherman as well as the camera-enthusiast. Mono Lake has an elevation of 6,500 feet, and the summit of the Tioga Pass road is only a few miles away, with an elevation of nearly 10,000 feet.

Odd Moments with the Camera

H. L. SPOONER

IN two previous articles, the author has demonstrated how easy it is for the article-writer to find plenty of material to write about in the country. One of these told of the opportunities along the roadside that may be developed into farm-articles; the other showed how the local history of a section can be made to pay dividends. The present article will describe how the person who is prepared with a snapshot camera gets opportunities to use it profitably in odd ways. These opportunities are likely to present themselves at any time. The author, therefore, always takes his camera with him whenever he drives, sometimes even when he walks.

During the World War, I lived in the city of Detroit, where the back yards are quite limited in size. Everyone was asked to use every inch of available space for a war-garden. I had lived in the country for years and knew how to raise a garden, and I had a good one. The yard was enclosed with a wire-fence. I wanted to grow some Hubbard squashes, but had no room in the garden. So I planted the seeds at the bottom of the fence and the vines ran up the wires. When the squashes set, I procured some box-boards from the grocer and made brackets for the squashes to lie on. I thus succeeded in maturing some nice large squashes. I thought my idea might be useful to other city-gardeners; so I took a couple of good snapshots and wrote up a description of the method of growing, under the title of "Vertical Gardening". This sold to *Detroit News* and to *Countryside Magazine*.

A neighbor of mine built a new chicken-coop about that time. I noticed that he put on the roof before he sided it. After the roof was on, he built the concrete floor. In building this, he put down a layer of concrete, then covered this with fine-mesh woven wire and then another layer of concrete. I interviewed him for the reason of building the roof before the floor and siding and for using wire in the concrete. My story, with a picture of the partially built coop, sold to *Farm Journal* and to *American Builder*.

My work at this time was in a railroad yard.

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One day I saw a blooded Jersey calf in a box car *en route* to some other State. The door was wide open and the calf stood in plain view. I had my camera with me and obtained a good snapshot which showed calf and car. As Michigan itself at that time needed all the blooded stock that it could get, I wrote a story on "Keep the Calves on the Farm", which, with the photograph, sold to *Jersey Bulletin*.

Before Christmas, while I was working at this place, a number of carloads of Christmas-trees were shipped in from Canada and from the upper peninsula of Michigan. Some of these had cards of the shippers attached. I obtained the name and address of one of the largest shippers and wrote him for information. I made several pictures of the loaded cars and borrowed others from the shippers which showed operations at a Christmas-tree camp. *Detroit News* bought the story that year, and the next year *Michigan Farmer* bought another on the same subject, but with different pictures, of which I had several.

For a time I lived in the city of Menominee, Mich. While there I met a man who had a back-yard poultry plant. He devised a silo to provide green food for his blooded chickens. The silo was necessarily small; but so was the silage. He used lawn clippings for silage, obtaining most of them from a park near by. He built the silo according to original ideas. I made some good snapshots and wrote the story of its construction. This was sold to *American Poultry Journal*. Later, the *American Lumberman*, seeing the story in the poultry paper, asked for a more extended one, which, of course, I willingly prepared.

When I lived at the little country town I have mentioned in my other articles, the local bank held an apple-show in its lobby. It did not intend it to be a fair; but it displayed a few good specimens from customers. Others saw these and brought in specimens, and it kept growing until it was a respectable show. The bank had some pictures made of the display and I made some myself of the building. One of these, with a two-hundred word story, sold to *Country Gentleman*. Another one went to *Detroit News*, while a still longer one was published by *Fruit Grower and Farmer*.

Last summer, while in my home county on vacation, I ran across something that paid all the expenses of the two weeks' vacation. In my former article on local history, I mentioned an old trading post on the Muskegon River. The keeper of this post could neither read nor write, and he kept all his accounts with customers by a curious pictorial system of bookkeeping which he devised himself. I had often heard of his way of keeping books; but on this vacation-trip, I ran across a specimen account in the hands of a banker whom I knew. I borrowed this and brought it back to the city with me, where I had several photographic copies made of it. I wrote the story, and it was accepted by seven periodicals—*Grand Rapids Herald*, *Muskegon Chronicle*, *Detroit Free Press*, *New York Times*, *The Nation's Business*, *American Lumberman*, and *Dry Goods Economist*. Needless to say, the story would have meant but little without the illustration.

A peculiar oddity of nature in my home-county furnished me with a salable story by having a snapshot of it. It was of a large sycamore tree that had fallen years ago on the banks of a lake. A small portion of the trunk, which was hollow, had remained, and from this prostrate hollow log seven limbs had grown upward and become sizable trees. I made the picture, which showed the lake through the hollow as well as the seven trees growing from the trunk. This sold to *Grand Rapids Herald* and *Detroit Free Press*.

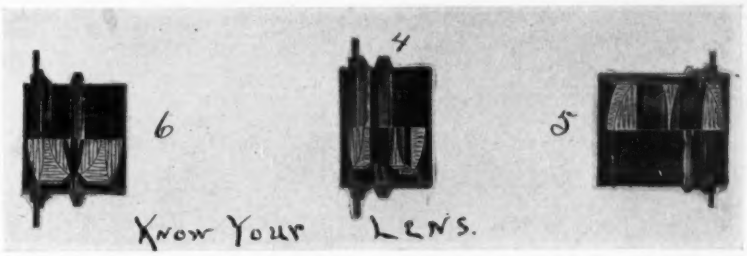
On an old mill-site I found where the farmer-owner now using the site had a large pile of seemingly new lumber. I investigated and found that he had discovered a veritable lumber-mine. The old mill yard had been partly in a swamp and several deep holes had been piled full of pine lumber. Moss and weeds had overgrown this, but the farmer discovered it and pulled out thousands of feet of good lumber. I snapped two of the piles and the holes from which they came. *Detroit Free Press* and *American Lumberman* published the story.

In this series of three articles, I have shown how any writer of articles can find material in almost any kind of place. But, as I have indicated before, it is absolutely useless to try to sell articles without illustrations. Pure news-items are about the only form of written material that will be accepted without pictures. I trust that the information given may enable would-be writers to get busy. The field is large. Don't keep on wishing that you could get a start; but make the start by investing in a camera, postcard size preferred, some pencils, and paper. Let your back-bone work instead of your wish-bone.

Some Tricks of the Craft

GEORGE W. BUCKLIN

WHEN learning the craft back in 1898, my old employer and teacher forewarned me that there was but one photographer in a thousand who could make good inside pictures and good outside pictures as well. He, of course, referred to portraits and commercial photographs, although the latter term had not been coined at that time. The first lens he gave me to practice with was an old-style rotary-stop wide-angle lens, and, of course, everything was cap exposure. Those were the days when ten-by-twelve-inch groups were made with a 3A Dallmeyer 6½ x 8½ portrait lens, because they knew just where to find its focus. With the coming of fast plates and anastigmat lenses we have lost many of the former tricks of the craft resorted to by craftsmen of the wet-plate days. The first of these was the placing of the portrait (Petzval) lens above the center of the lens-board, some portrait cameras even having a rising front.



THREE TYPES OF LENS-CONSTRUCTION GEORGE W. BUCKLIN

The purpose of this article is to deal with wide-angle lenses and to show how to obtain the greatest depth of focus with the greatest speed and brilliancy, secured only by larger stops. Almost all the faults of a lens—with the exception of a rectilinear lens—can be overcome by stopping down; yet stops below F/11, F/12.5, or F/16 are almost out of the question for dark interiors, especially where color is involved—even the so-called speed plates do not help us out greatly unless we use flashlight.

Personally, I prefer to use clear Mazda lamps and pancromatic plates or films for this type of work, because of speed, color-rendering, ease of light-control, soft shadows, and roundness. What we lose in speed, we gain in power in the case of the wide-angle lens. Short focus gives us great depth; but as all our tables are for center focus only, the larger the plate used with any given lens the more carefully must we test the marginal focus for depth, for it may be in front of or behind the central focus and in a few cases may even change with the use of smaller stops.

How much and what kind of curvature of focus has an anastigmat, flat-focus lens? This may seem a queer question to ask. Our test-charts are of little help in practical use of average wide-angle lenses, as these lenses are of little or no value for copying: *first*, because of small diaphragm; *second*, because we overlook the reversing of the lens when copy is to be enlarged; *third*, because of short focal length distortion; and *fourth*, because of the design of equivalent focus—*i.e.*, smallest image with longest focus possible, thus breaking the axiom that an enlarging lens should be similar in focus to the original lens used. I am quite sure that the Bureau of Standards would not certify such a lens for expert work on disputed documents, as it has done for the lenses used by an expert in this work in Wichita, Kans., which expert makes quite a point of this fact before the juries. Rectilinearity is built into the lens by the maker; but unless the camera-back is perpendicular, the walls will fall in or out, as the case may be.

For banquets, interiors, or bird's-eye views, the front of the camera is usually lowered, bringing the lens below the center of the plate. This causes the objects nearest to and largest in the foreground of the picture to be made by the weakest part of the lens-image. The reverse of all this is true when photographing tall buildings from the ground. To overcome this, a few cameras are made with swing front. This brings

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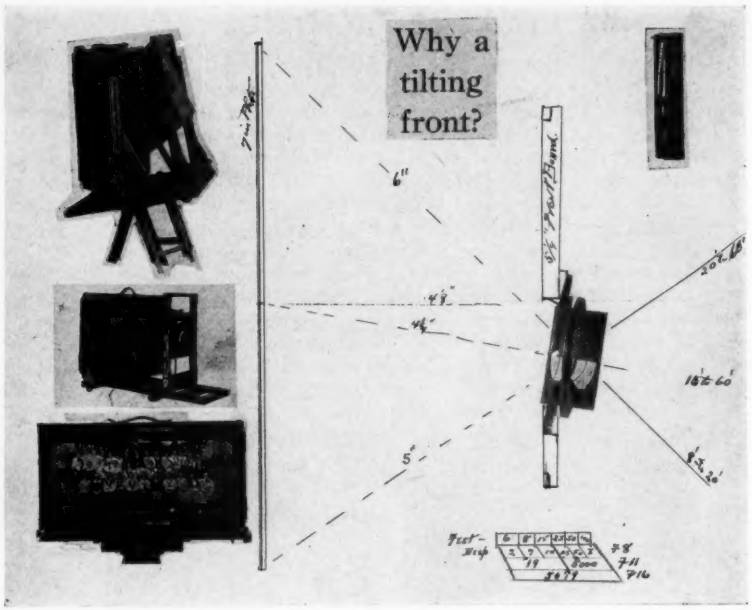


TILTING FRONT AND DEPTH-OF-FOCUS TABLES GEORGE W. BUCKLIN

the center of the lens back in line with the center of the plate and relieves the marginal strain, at the same time lengthening the focus on the near objects and shortening the focus on the ceiling.

Results similar to the tilting-front may be obtained by making a reversible lens-board, on which the lens is mounted slightly below the center and tipped so that when in use the lens will point to the center of the plate. Plastic wood is a great help in fitting the board and flange at proper angle. This method also has advantages over the tilting-front in that there is less strain on bellows and less likelihood of cutting off part of the picture, with folds of the bellows, when the lens-board is turned top for bottom in photographing tall buildings.

At conventions, I have often been asked the best way to photograph a banquet where the tables extended almost from wall to wall. *First*, we must raise our camera so that those in the front row will not shade all the rest and so that near persons will not be too large. *Second*, the camera must be as far away as possible, back flat against the wall. The tripod will not allow this unless the leg at the rear is drawn forward between the other two and placed on a small box or let hang straight down the wall. It is very evident that this will not permit focusing or arranging on the groundglass.

Our depth-of-focus tables will show that at F/16, or even F/12.5, the short-focus lens would be universal focus, if used on a small plate, so that the center of our picture is of little importance. Our important measurements are for marginal distances. Our front row, with camera set as above described, would be about six feet, with 8 feet at extreme corners; the far end of the table, say forty or sixty feet, comes near the center of the lens and greatest depth of focus; the ceiling runs twenty to thirty feet before cutting into the picture, because our lens is below the center and tipped slightly downward on the front board; but the back must be perpendicular. In buying a new lens of this type, this is the real test of what focal length to select; or, at least, what tip to give the lens on the front board so that perpendicular walls and desired marginal focus coincide.

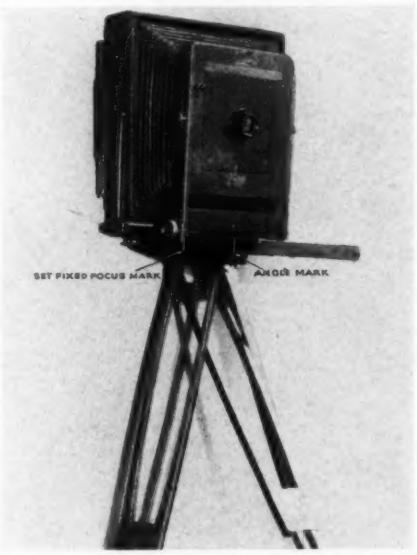
Some commercial photographers, who make a specialty of banquets, even go so far as to build a fixed-focus camera for this purpose only. As the wide-angle lens has a small stop, at best, the test for these measurements must be made in bright sunlight—at an open window. When the camera is completely adjusted, the markings

can be made on the bed of the camera runway. It is also well to place angle-marks on the lower side of runway, as the camera will be from seven to nine feet high when in use.

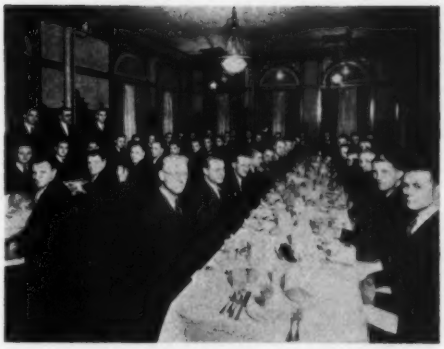
All the adjusting, loading, and slide-drawing is done before entering the banquet-room. I know of a new theater that desired a picture of the audience, and the photographer was given two minutes to set up and flash. He came away with a good picture in fifteen seconds by the stop watch.

Beware of cigarette smoke or steam. That means securing the picture at the beginning of the banquet, which also insures the advantage of being able to show proof and get the cash on orders right after the banquet. With the coming of panchromatic film, I have almost discarded flashpowder, because with one or two 1,000-watt clear Mazda lamps, using stop F/12.5, exposures run from 5 to 10 seconds. I prefer to have the light "painted" on, as it relieves objectionable shadows and overlighting of the foreground.

The General Electric Company recommends soap and water as a great help in obtaining the most that is possible out of the ordinary lighting-fixtures, as these add greatly, even though they are colored, when panchromatic plates or films are used. Last of all, run the lamp-leads directly to the fuse-box, using extra large wire. But of that I shall have to write later.



SHOWING HOW CAMERA IS MARKED
GEORGE W. BUCKLIN



A WIDE-ANGLE BANQUET PICTURE
GEORGE W. BUCKLIN

[More and more advanced amateurs, as well as professionals, are finding ways and means to simplify their photographic work and at the same time increase their own efficiency. In many cases, it is not possible for either the amateur or the professional to own just what he wants in photographic equipment. It then becomes necessary to devise original ways and means to make whatever equipment is available cover as many photographic requirements as possible. Mr. Bucklin has suggested informally a number of photographic tips which will doubtless be of service to a number of our readers. It should be remembered that in most cases each individual will have to work out his own application of the suggestions made. There are so many types of lenses, cameras, and accessories that all of them could not be specifically mentioned, but usually a fundamental principle may be applied as successfully with one type of equipment as with another. Mr. Bucklin has wisly suggested the great value of knowing one's lens. We are often inclined to overlook the fact that a modern anastigmat lens is as wonderfully and beautifully made as a jewel, and that it merits the same care and protection that we give to a jewel. As a matter of fact, camera shutters are as delicately made as a watch and merit equal consideration. All cameras have adjustments which deserve careful handling in order to maintain their accuracy. In short, it is to our own advantage to take the best possible care of all photographic equipment. We hope that other readers will send in similar practical and helpful suggestions from time to time.—EDITOR.]

JULIA
D. J. BRODERICK
HONORABLE MENTION—PICTURES OF CHILDREN

EDITORIAL

The Photographic Harvest

AT this season of the year we are all giving thought to the harvest. Directly and indirectly we are all affected by its size and quality. What is true of crops is true, in great measure, of photography. Thousands of us begin the summer season with enthusiasm and equipped with all manner of photographic apparatus. We journeyed overseas and throughout the length and breadth of our own great country. We witnessed scenes and effects which perhaps we may never see again. We met men and women whom to know was a very real pleasure. Perhaps, again, we were building a home or laying out an estate. Whatever we saw and wherever we went, we used our cameras with the hope that we would record faithfully and also artistically the scenes we witnessed and the people we met. Some of us may have done our own photo-finishing and thus kept informed of our failures and our successes; and again we may have been obliged to hold all the exposed plates or films until we returned to our homes. No matter how the photographic seed was sown, or how much of the product we have been able to enjoy along the way, the fact remains that now is the time when our planting and our harvesting will be finally judged.

Even the most experienced ones among us will have failures at times, and even the newest beginner will have outstanding success. Rarely is it possible to record complete success, with no failures for an entire photographic season. Of course, we feel bitterly disappointed at our failures, especially when they involve subjects which, in all probability, can never be duplicated. Nevertheless, we cannot alter the fact; and it does no good to mourn over that which is past. Rather should we rejoice over our successes, and insofar as possible we should profit by them; so that we may gain confidence for the future. It is wise to examine our failures closely and to determine, if possible, the cause of failure. In most cases, we need no one to tell us that we have no one to blame but ourselves. We may have been careless in focusing, in the matter of exposure, in setting the shutter incorrectly, or in attempting to do the impossible with the equipment we were using. It is rarely nowadays that the manufacturers of photographic equipment are justly to blame for photographic failures.

The photographic harvest may be of tremendous value to us, directly and indirectly. It is well worth the time and effort to make a thorough study of every negative and print, good or bad, which we have made during the past summer. By examining our own work critically, we can very often prove to be our own best judges. The important thing, however, no matter what the final harvest may have brought us, is to look ahead with courage and confidence and to determine in our own minds that during the coming year we shall not repeat past failures, but that we shall attain even greater success.

Competition Changes

ELSEWHERE in this issue will be found reference to important changes in our competitions, awards, and rules. Beginning with pictures reaching us on or before the 5th of October, the "Outdoor Genres" entries will be judged; on November 5 the "Animal Pictures"; and on December 5 the "Water Scenes", thus completing the 1930 schedule of subjects. Thereafter, every month the subject will be "Miscellaneous", and all pictures in our hands on the fifth of the month will be judged and reproduced the following month. There will be only one competition entitled "Our Monthly Competition"; and this will be open to all. We call attention to the adoption of the point system which has worked so successfully for five years in the PHOTO-ERA TROPHY CUP competition for camera clubs. Each month there will be a "Competition Scoreboard" published which will list all those who receive awards. This list will be continued throughout the year, so that all those who enter "Our Monthly Competition" will see how they stand. The person who wins the greatest number of points will be awarded the PHOTO-ERA competition cup. We ask the co-operation of our readers during the coming months.

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OUR MONTHLY COMPETITION

Closing the 5th day of every month
Address all prints to PHOTO-ERA MAGAZINE, Monthly Competition
Wolfeboro, New Hampshire, U.S.A.

Awards

First Place	10 Points
Second Place	7 Points
Third Place	5 Points
Honorable Mention	4 Points

(*a*) The person having the highest number of points at the end of the year, December 15, 1931, will receive an engraved silver cup; the next two highest, smaller engraved silver cups; and the next five highest, one-year subscriptions to PHOTO-ERA MAGAZINE.

(*b*) *Those who win awards will receive Certificates.*

(*c*) Those who win an Honorable Mention Award and are *not regular subscribers, or have not been regular subscribers,* will receive PHOTO-ERA MAGAZINE for six months, with the compliments of the publishers.

(*d*) No competition-pictures are sold, exchanged, or the halftone-plates sold without permission, in writing, from the maker of the print. Proceeds of all sales, *excepting halftones,* go to the maker of the picture.

(*e*) All competition-pictures not returned are used to make up the PHOTO-ERA PICTURE EXHIBIT which is sent to schools, libraries, museums, camera clubs, and to responsible organisations for exhibition-purposes, *free of cost.*

Rules

1. This competition is free and open to all.
2. Not more than two subjects may be entered. *Composition, exposure, and photo-finishing must be done by the competitor.*
3. Mounts must not be larger than 16 x 20 inches. Prints may be mounted or unmounted.
4. Each print must bear on the back the maker's name and address, and the title of the picture, and should be accompanied by a letter, giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer, and printing-process. Enclose return postage. Data blanks sent at request. *Entries which do not comply with this rule will be omitted.*
5. Prints receiving points become the property of PHOTO-ERA MAGAZINE, unless for special reasons. This does not prevent the photographer from disposing of other prints from such negatives after he shall have received official recognition.

Photo-Era Competition Cup

6. Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces is sent with data.
7. Prints should be carefully packed between two layers of cellular board so cut that the corrugations run at right angles to each other.

AWARDS—ADVANCED COMPETITION

Subject—PICTURES OF CHILDREN

Closed July 31, 1930

First Prize	J. H. Field
Second Prize	Harold W. Clark
Third Prize	Gordon Ludwig

Honorable Mention: Clifton Adams; Allan F. Barney; Matthew S. Beros; D. J. Broderick; Daisie B. Chapell; Charles Clayton, Jr., Dr. Irving B. Ellis; George W. French; E. J. Hartung; Ray Lee Jackson; Sorab J. Kharegat; Walter Lipkau; Lawrence L. Martin; Melvin Martinson; Anne H. Mellin; C. E. Melville; Dr. B. J. Ochsner; Albert B. Street; Dr. Max Thorek, F.R.P.S.; J. N. Unwalla; Wm. O. Yates.

LITTLE MISS SUNSHINE
J. H. FIELD
FIRST PRIZE—PICTURES OF CHILDREN

THE FIRST TO GO
SECOND PRIZE—PICTURES OF CHILDREN

HAROLD W. CLARK

SO TIRED
THIRD PRIZE—PICTURES OF CHILDREN

GORDON LUDWIG

SUBJECT FOR NEXT COMPETITION

ADVANCED AND BEGINNERS

Subject for Competition—1930

"My Home." Closed January 31.
"Portraits." Closed February 28.
"Indoor-Genres." Closed March 31.
"Miscellaneous." Closed April 30.
"Commercial Illustrations." Closed May 31.
"Architectural Subjects." Closed June 30.
"Pictures of Children." Closed July 31.
"Miscellaneous." Closed August 31.
"Outdoor-Genres." Closes September 30.
"Animal Pictures." Closes October 31.
"Water-Scenes." Closes November 30.
"Miscellaneous." Closes December 31.

Important Changes in Competition Rules and Subjects

BEGINNING with this issue, we shall make an experiment in the matter of our competitions, the subjects and rules. For a number of months we have been sounding out our friends who like the competitions, and, as a result, we shall put their consensus of opinion to the test. Beginning with this number there will be but one competition, entitled "Our Monthly Competition", and open to all. After the "Animal Pictures" and "Water-Scenes" subjects have been completed—see 1930 schedule—the subject every month will be "Miscellaneous". In order to include point-winning prints in the next issue after each competition, all prints in our hands on the fifth of each month will be judged on that date. Any prints arriving after that date will be entered in the following month's competition. Instead of awarding monthly prizes of silver cups or photographic supplies or books, we shall award annual prizes to those competitors who win the greatest number of points during the year. In short, we shall adopt the same scoring method that has worked so well in our PHOTO-ERA TROPHY CUP competition among camera clubs. Each award will count so many points. A "Competition Scoreboard" will be printed each month which will give the name and score of every contestant who wins an award. The person having the highest number of points at the end of the year will receive an engraved silver cup; the next two highest, smaller engraved silver cups; and the next five highest, one-year subscriptions to PHOTO-ERA MAGAZINE. This will not affect the present award of a six-months' subscription given to every winner of an Honorable Mention award, who is not, or never has been, a subscriber. The final date for presenting the awards will be December 15, 1931. This makes fourteen months; but it was thought best to make the awards at the end of the year, rather than during the year.

The contemplated changes will in no way affect the PHOTO-ERA TROPHY CUP competition for camera clubs, which began in September for the year 1930–31, and will end, as usual, with the June competition. The Fort Dearborn Camera Club has won the Trophy Cup twice and is, therefore, determined to win it the third time, since then the cup will become the permanent property of that club. There is every indication that the Trophy Cup race this year will exceed in interest any that have preceded it since 1925.

For a time there may be a little confusion while the change in competition rules and awards is being made known; but we believe that our readers will co-operate with us in giving the new program a fair trial. The new rules and awards are printed in full in this issue, and thereafter. Of first importance it is to remember that all prints for "Our Monthly Competition" must be in our hands on the fifth of each month, or they will be held over for the fifth of the following month. Those who are eager for keen competition with others are now offered an opportunity to prove their mettle, not so much for the awards as for the genuine pleasure of good sportsmanship.

A. H. BEARDSLEY.

AWARDS—BEGINNERS' COMPETITION

Subject—MISCELLANEOUS

Closed July 31, 1930

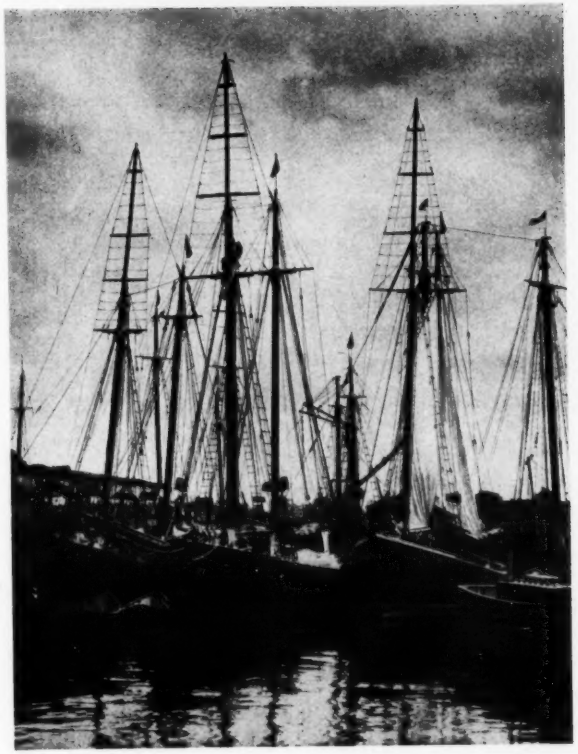
First Prize . . . . . Yoneo Usami
Second Prize . . . . . Arthur J. Lang

Honorable Mention: Edward Bafford; J. M. Banerjee; Roland F. Beer; Fred Beidleman; James A. Bell; O. C. Crossley; J. Daniels; Carl Demaree; Albert F. Gatow, Jr.; Edward L. Gockeler; Earl Gray; Dr. Kelley Hale; Lionel Heymann; I. Higo; O. Holmes; Ernest Kubler; W. Laurence LePage; Isidore Levitan; A. E. Moebs; George Nelidoff; Harry Nichols; Edward Nusbaum; Glen Powers; Leroy S. Redlon; Bruce Schetnitz; Edward Schoepke; Carl E. Shaw; Richard S. Shuman; G. T. Sundstrom; William C. Vestal; Edward D. Wilson; George Wing; Yoshida.

XUM

SHADOW
FIRST PRIZE—BEGINNERS' COMPETITION

YONEO USAMI



SAFE IN THE HARBOR
SECOND PRIZE—BEGINNERS' COMPETITION

ARTHUR J. LANG

OUR ILLUSTRATIONS

ERNEST H. WASHBURN

EDWARD P. MCMURTRY is a splendid representative of that rapidly increasing number of men and women who have found in pictorial photography a greater vision and a deeper pleasure than they thought possible. Mr. McMurtry has enjoyed the opportunities of travel in nearly every part of the world and he has successfully capitilised his opportunities. His beautiful marine, which graces the frontispiece in this issue, well deserves the long list of awards which it has received in the leading salons of the world. When one learns that this picture is an enlargement of part of a 2¼ x 3¼ filmpack negative, one cannot fail to become impressed by the fact that the modern high-grade small camera is certainly wonderfully effective. Mr. McMurtry has endeared himself to a large number of pictorial photographers because of his pleasing personality and his willingness to share with others the results of his photographic experiences. After all, those who gladly help others over the rough road they themselves have traveled never lose, but rather gain by such service. In viewing Mr. McMurtry's marine one might, at first glance, feel that there were a number of conflicting lines and masses, and that there was no strong center of interest. However, as one studies the picture, it becomes apparent that all parts of the composition fit in to a harmonious whole and that the eye finally rests squarely on the boats just a bit to the left of the center of the picture-area. The boat, with the rather prominent figure at the stern, which seems to be sailing out of the picture, is needed in the composition. Cover it up, and it becomes apparent at once that this dark mass is vitally important to the effect of the picture. We are glad that Mr. McMurtry found the time to give us his interesting article and to send us a picture which our readers can study with so much pleasure and profit.

Data: Made in Flushing, Holland, in August, 1927, at 7.30 A.M.; weak sun; with 2¼ x 3¼ Kawee camera; Ilex Photoplastic lens, 4½-inch focus; no filter; 1/50-second on Agfa filmpack; metal-hydro-borax developer; enlarged on Ansco Contest paper. Although made on 2¼ x 3¼ film, the actual size of the part from which the enlargement was made is 1¼ x 1¼ inches. This picture was hung in Salons as follows: Syracuse, N.Y., 1928; Los Angeles, Calif., 1929; Buffalo, N. Y., 1929; Edinburgh, Scotland, 1929; Birkenhead, England, 1929; Portland, Maine, 1929; Copenhagen, Denmark, 1929; Elbeuf, France, 1929; Tokio, Japan, 1929; Paris, France, 1929; New Westminster, Canada, 1929 (bronze medal); Dublin, Ireland, 1929 (bronze medal); Gothenburg, Sweden, 1929; Barcelona, Spain, 1929; Preston, England, 1930; Bishop Auckland, England, 1930.

Without question, the day of the small camera is here, and here to stay; for a large percentage of amateur photographers will not carry about any camera of substantial size or weight. It might be supposed that, with the general use of automobiles, larger cameras would become popular again, as the burden of hand-carrying is largely discounted. But it does not work out that way in actual experience. In this day and age, the cry is for simplicity and rapid action; so the photographer chooses an instrument which is quickly and easily handled. Fine quality in precision-build cameras allows him to work quickly and efficiently; and later, with scientifically designed enlargers, he makes his large prints of any size, at will, and at his leisure.

T. H. Scanlan, in his article on the 45 x 107-millimeter camera, makes a strong case, although the majority of workers do not incline to stereos; partly, I am convinced, on account of the quite considerable expense involved in the purchase of a fine, small stereo outfit. Nevertheless, there is no gainsaying that the results to be obtained by the skilled worker are, without doubt, of a very high quality. I have seen wonderful 11 x 14 prints from the 1¾-inch square negatives. Mr. Scanlan shows here a print of about 4 x 6 inches, which compares favorably with a direct contact print, and this from only one-half of a tiny stereo negative. So we have the proof, and it only remains to follow his example.

The group of four small contact prints is of interest, showing the extreme sharpness and depth of focus obtainable. It is regrettable that three of them are lacking in vigor, as the subjects are finely selected. The third, especially, had great possibilities. A better placement of the human figure, or even its omission, would have revealed the highway, permitting the interesting road to be followed by the eye. The placement of the tree and its shadow form an excellent frame, enclosing a little gem of a picture. "Autumn Sunshine" needed a more rapid exposure to catch the walker without blur. There were also good possibilities in the crisply but transparently lighted shadows on the buildings. But we must not be too critical, as the prints are submitted for instructional purposes, rather than for pictorial review. "Altdorf" presents another subject well adapted to enlargement, with judicious trimming at bottom. There are no data, other than those to be found in the article.

Having traveled, in imagination, and by the help of Mr. Strong's fine articles and pictures, in the last two issues of PHOTO-ERA MAGAZINE, to Iceland and Norway, we, this month, are taken on a camera-trip to the Canadian wilds by Earl W. Gage. His facile pen tells a story as interesting as his pictures, and although his story narrates largely of the experiences of another, they are so thrillingly told as to whet one's appetite for the kind of camera-work so vividly set-forth. His pointers for the would-be camera-hunter, toward the end of his story, are worthy of note, in lieu of data, none of which are given for his illustrations, specifically.

XUM

"Photographing a Mirimichi River Salmon" is well done, so far as the subject itself is concerned. The setting, the figures, and the canoe are nicely arranged, but we could wish for some sign of life in the fish. It is to be hoped that it performed for the ciné-camera operator, enough to repay him for getting his feet wet.

"Bull Moose, Drinking" is very realistic and has every evidence of genuineness. No faking here, and the bull is entirely without suspicion of man's proximity. Otherwise, he would not have been there.

Considerable work on the "Fox Family" print is desirable to bring out the best of it more prominently. Almost an inch might well be taken from the top, and the irregular white streaks and blotches worked out, which would center the attention on the foxes. At present, the defects mentioned are disturbing.

There is no lack of concentration in the "Cub Photographer", but we should imagine it might be advisable to rescue the leather case before it disappeared.

The "Musk Oxen on Defense" are ominous looking, especially the long hooked horns. We are reminded of Captain MacMillan's picture and description of these beasts, in one of his books on Arctic exploration.

"Deer in Jasper National Park" is wild enough to suit anybody. It is a rare combination of wild scenery and wild life. For the purpose of concentration of interest on the fine buck, it seems advisable to trim about one-half inch from the bottom. The same amount could be taken from the left without harm to the whole. It is such a fine shot that the utmost should be made of it.

J. N. Unwalla's honorable-mention picture, "Amy", is without a flaw, technically, and the lighting is well directed. The baby's pose and expression are not so successful. She appears uncomfortably placed, tense, and ill at ease, as evidenced by the expression of the eyes and clenched fist. It is regrettable that a better position and expression were not obtained by Mr. Unwalla, who shows such skill and understanding on the technical side.

Data: Made in Bombay, India, in December, at 11.30 A.M., by daylight and electric light. Saunderson camera, 6½ x 8½; Dallmeyer Stigmatic, Series II., F/6, 10.7-inch focus. Exposure ½-second at F/6, on plate; developed in Azol; contact print on Mimosa Orthotype, No. 1, sepia-toned.

Clarence Ponting is a very able and versatile technician, and has shown PHOTO-ERA readers many a "wrinkle" from his store of knowledge. We feel that in this month's demonstration, however, he has used a rather overpowering cloud for the scene. It appears to blanket the distant headland and to be on this side of it, like a fog-bank. We think it should be in smaller scale, higher up and less prominent. But possibly Mr. Ponting overemphasised it purposely, to enforce the point. We are inclined to that viewpoint, but advise moderation in printing-in clouds.

Willard D. Morgan has a very interesting way of telling his travel-experiences, and he punctuates them well with his fine photographs; so that anyone wishing to follow his outlined trips could do no better than to follow his advice and copy his procedure. His "Mono Lake" is a fine job. It is well placed and skillfully recorded. He says: "Great white clouds float over the lake in their immense sky-patterns and give an added beauty to this crater-land. Volcanic cones exist in nearly every direction about Mono Lake. Ducks and sea-gulls paddle and float over the surface." Data, F/22, 1/5-second, with sky-filter. Agfa film.

The group on page 214 is of absorbing interest. "A Ghostly Shore" is an unusual aspect of Nature's work, attracting not only the photographer but the sketcher as well, whose busy figure Mr. Morgan has so well placed in the left foreground. The ever-rising Mono Lake, in California, causes this ghost-like appearance along the shore.

Data: Eastman film.

"Slide on Black Point" displays a remarkable freak of volcanic work which, again, appealed to the sketchers, who, no doubt, were able to record the colors, which the photographer was compelled to do without.

Data: Agfa film; 1/5-second, at F/22; 4 P.M.

"Sleeping Lady" volcano and "Weird Formations" are also of exceptional interest and contrasting character. The latter is especially interesting, with its curious formations, apparently caused by ages of storm and sunshine. Both of these were made on Eastman film. Incidentally, it is worth noting that a small stop was used in all of these shots, securing hair-sharp negatives, recording every valuable detail and capable of any desired enlargement, and suitable for slide-making—points not to be overlooked in travel-photographs of scientific value.

George W. Bucklin passes on information of an extremely practical kind—the fruits of his long experience in commercial work. We find that his reproduced cuts of lens-types and various camera-adjustments whet our appetite for more instructions, and hope to find them in a further article. Sound technical methods are the best foundation for all kinds of photography.

D. J. Broderick's "Julia", which gained an honorable-mention, is a very fine portrait and does him credit. It is well placed, properly focused, and "chemically perfect", to use an old expression. The pose and beautiful simplicity of facial expression are a delight. Possibly the lighting on the child's left cheek is overdone somewhat, but that is modern, we suppose. We should like to see more of a depression under the left eyelid. The hair-bow is not an addition, as it competes with the eyes. We are sure, nevertheless, that this portrait must have pleased "Daddy" and "Mamma". We regret there are no data.

Advanced Competition

Pictures of children is a branch of photography which always gives an opportunity for a large variety of posing and facial expression. This month's competition has brought out a wide range of subjects, all interesting. J. H. Field, who has won first award, is a worker of many years' experience and outstanding success. His pictures, be they landscapes or portraits, always scintillate and spread sunshine. And they are always delicate and simple. There is never any doubt as to what Mr. Field intends to show. In the present picture, so suitably titled "Little Miss Sunshine", he employs a few splashes of highlight and a

few strong shadows to concentrate our interest upon the adorable face of the lovely child. We are captivated by her beauty and friendly, unconscious smile. The arms and hands, too, are perfect. By skillful manipulation the artist has subordinated the feet and back ground, so that we have no desire to observe them but naturally dwell upon the face. This is a triumph of child photography.

Data: Taken against the light, on Eastman Portrait film, par-speed; 5 x 7 view-camera. Hyatt rapid, triple-convertible lens, used wide open and diffused. Exposure about 1/5-second. Tank-developed in pyro-soda and enlarged on Vitava Rapid Black, B.

"The First to Go", by Harold W. Clark, winning second prize, is one of those fascinating shots that always tickle our "funny-bone". There is no faking about this—it is Simon-pure photography. The sparkling eyes are "immense". Of course, we might like to be rid of the white collar, but it can't kill that toothless grin. Question: Where was Mr. Clark when the Eastman competition was on? Surely this picture must have gained honors.

Data: Made in November, at 1 P.M., in very dull light; 3¼ x 4¼ Graflex; Dogmar lens, of 6½-inch focus; 1/25-second at F/4.5 on Eastman rollfilm; developer "D-7". Enlarged on Eastman Rough Luster D.

Of all the sleepy baby pictures we have seen, Gordon Ludwig's "So Tired" positively is the most realistic. How could it possibly be better? It simply could not. The yawn is catching, too. It makes one sleepy to look at it. Mr. Ludwig was right on the job when baby yawned; as, of course, he didn't know it was going to happen. He is fully entitled to the prize awarded him.

Data: Ica camera, 2¼ x 3¼; Zeiss lens, 4.5 inches focal length; 1/25-second at F/4.5 on Agfa filmpack, in June, at 2 P.M.; daylight and one 400-watt light combined; M. Q. developer; Enlarging Cyltex print.

Beginners' Competition

ONCE more one of our Japanese friends scores with a pattern-picture that most of us would pass by without a second glance. In addition to being a catchy design, "Shadow" is unusually fine in values and textural qualities. Each item has the quality belonging to the kind of material it is made of. For a beginner, Mr. Yoneo Usami makes a fine start. He will do well in the advanced class, later, we feel sure.

Data: Voigtländer, 2¼ x 3¼; F/4.5 lens of 10-centimeter focus; 1/100-second at F/4.5 in April, at 4 P.M., in sunshine; Agfa filmpack; Eastman tank-developer; enlarged on Vitava Projection.

"Safe in the Harbor", by Arthur J. Lang, is a fine little marine. The work is clean and well executed in every way. The composition suffers from too many vessels being present, and all of practically the same tone. Notwithstanding, the picture is a fine little record, and has good tonal qualities. The print calls for more than passing comment, being a contact carbon by the recently exploited "Fresson" method. It is a little gem and reflects credit on its maker.

Data: Graflex, 3¼ x 4¼; Schneider Xenar, 18-centimeter focus; sky-filter; 1/75-second at F/8, in May, at 12.15 P.M.; bright sun; Eastman filmpack; Eastman developer-powder. Print on Carbon-Fresson. Picture made at Gloucester, Mass.

AGOSTO — WALTER LIPKAU

XUM

THE EDITOR'S CORNER

Not Always So Easy

PERHAPS some of our readers hold the impression that an Editor is a sort of restless individual who must do something periodically to stir things up editorially, and otherwise, in order to maintain reader interest. We deny emphatically that we belong to this classification of editors. We believe in well-considered changes when we feel that such changes will result eventually to the advantage of our readers and the magazine. It is not always so easy to make changes as it might appear. An Editor, popular opinion notwithstanding, usually has a heart; and he is very apt to be sentimental with regard to long-established features of his publication. Furthermore, there is a bond between himself and those who carry on special departments which is not lightly broken. It is difficult to uproot the things which have become part of one's daily life and thought over a period of years. However, the world, and those in it, cannot stop. There is the relentless forward urge to new and better things in art, science, and commerce. Whether we like it or not, we must either try to keep up with the march of events or drop behind into possible mental and physical desuetude. When changes become necessary, we face the pressure of sentiment on the one hand and the cold, hard demand of profit and loss on the other. That which was excellent five years ago is often obsolete today. It requires less effort to let things run along in the same old way, especially when we prefer some of the old ways to the new ways; but we prefer the more difficult way, which is the willingness to scrap cherished ideas, provided that eventually we can render better service and keep more closely attuned to the progress of the world.

Those Annoying Small Cameras

THE mosquito is a comparatively small insect; but who will deny his supremacy when there is just one of him in a bedroom at night and he is in full voice? And when he alights, and he goes a-boring into some exposed part of one's anatomy, who is master of the situation? In a sense, the modern small camera is the mosquito of modern photography, with the sting left out. The little cameras are everywhere, and buzzing around with activity. It is annoying to many of us to be afield with the good old 5 x 7 or 8 x 10 view camera and have someone with a vest-pocket camera put our best efforts to rout. Even the 4 x 5 and postcard size cameras are "big" outfits today. The annoying part of it all, to many of us, is that these small cameras unquestionably equal, and often surpass, the work done by the large equipment. We do not like to admit it; but why carry a 4 x 5 when a 2¼ x 3¼ will do the required work equally well, if not better? To be sure, the larger cameras will always be needed for special work; but so far as the average amateur photographer is concerned, the high-grade small outfit will certainly meet virtually every requirement, and its supremacy cannot longer be justly denied.

"Abe" Joins Us for a Week-End

AT 46 Bromfield Street, Boston, Mass., there is the Tremont Camera Exchange, better known throughout the country as "Abe" Feigenbaum's Exchange. Here one may buy, trade, and exchange photographic equipment to one's heart's content, knowing all the while that whatever "Abe" says is so. When a man who is unknown can arrive in Boston, and, in a comparatively few years, win the respect and confidence of the leading amateur and professional photographers in the United States and Canada, he has accomplished something eminently worth while. What is more, it represents single-handed effort; for "Abe" did it alone. Because he was carrying on a "one-man show", he did not feel like shutting up his office and taking a vacation. However, when the Labor Day week-end arrived, we were very glad to welcome him, Mrs. Feigenbaum, and their son David, as our guests—and what a good time we did have during those three days! We have known "Abe" for many years, and we feel happy, indeed, to be counted among his friends. Our friendship has grown stronger with the years, as "Abe's" friendship with others has grown, because all his friends know that when "Abe" says it is so, it is!

The Pictorial Educator Department

WE feel greatly indebted to Mr. Arthur L. Marble, who for several years has co-operated so splendidly with us in the matter of conducting the department "The Pictorial Educator". There have been many favorable comments with regard to Mr. Marble and his work in this department. However, it has seemed best, for a time at least, to discontinue Mr. Marble's department and, therefore, beginning with this issue, it will be omitted. As we have said on a number of previous occasions, we are glad to establish new departments when they seem to fill a need, and we are just as glad to discontinue them whenever it seems best to do so. Like many other things which serve their purpose, our departments are intended to serve our readers; but on the other hand, they are not continued any longer than they appear to be popular with the majority. We are always glad to resume any department for which there is a demand. We again express our appreciation to Mr. Marble and thank him for his splendid co-operation in working with us to see whether or not his department is meeting the needs of the majority of our readers.

THE MONTH IN APPLIED PHOTOGRAPHY

C. B. NEBLETTE, F.R.P.S.
Division of Photography, A.M., College of Texas

High-Frequency Photography

"It happened so quickly, I could not see clearly what happened." All of us have heard that expression, not once but several hundred times. Most of us can recall instances personally in which we were eye-witnesses of some event and yet could not clearly describe what we saw. There are many things that happen too rapidly for the eye to follow. The eye cannot see the motions of a bullet in flight, the blades of an airplane propellor, or the leg movements of a racing horse; nor can it take in the slow unfolding of the petals of a flower or the growth of a plant; the one, because the motion is too fast, the other because it is too slow. However, by means of high-frequency photography (*i.e.*, photographs made in rapid succession), it is possible to discover, or render familiar, the successive attitudes, or actions, which collectively make up a given motion, and thus subject to analysis movements that take place too swiftly for the eye to follow accurately. It is now an almost forgotten fact that the motion-picture had its origin in photographs made for the analysis of motion; and while nearly everyone is familiar with the slow-motion pictures of horse races, golf, and tennis matches, and other sporting events which appear periodically in the newsreels, few know of the many ways in which the slow-motion picture is used in scientific research.

In order to slow down motion, the rate at which the individual pictures are made must be greater than that at which they are projected. A rate of sixteen pictures per second is the slowest at which the illusion of motion is preserved. At slower speeds, the eye is not deceived; the alternate periods of light and dark become perceptible, the successive moments during which the screen is illuminated do not merge insensibly into one another, but stand out as separate impulses, and the illusion of motion is destroyed. If a film which is exposed at the rate of 32 pictures per second is projected at the normal rate of 16 per second, all motion is slowed down to one-half its actual speed; but 64 pictures per second the slowing down amounts to 4 times; and with 128 pictures per second, to 8 times. In order to make 128 pictures per second with a motion-picture camera of the usual type, in which the movement of the film is intermittent, the mechanism which moves the film into position for the exposure must travel at the rate of 256 times per second, and the film itself must be accelerated from the stationary period to a speed of approximately 16 feet per second during its travel downward for the succeeding exposure and back to a complete stop again, all within 1/256 part of a second.

From this it is evident that an intermittent movement designed for use at normal speeds would be altogether impractical for a high-speed camera making 128 pictures per second. The Bell and Howell Company, constructers of most of the professional cameras and equipment used in this country, have designed a movement fitting their standard camera which, although designed for operation at a speed of 128 pictures per second, has been employed in short runs at 250 per second. This speed has been attained in one or two other cameras and represents the maximum speed yet realised in a camera employing intermittent motion of the film. For higher speeds it is necessary to abandon intermittent motion and to devise means for using film in continuous motion.

But if the film is in continuous motion and at a high rate of speed, how can sharp images be secured? There are two solutions to this problem: (1) The individual exposures may be made so short that no sensible movement occurs during the exposure, or (2) the images on the film may be made to move during the exposure at the same rate as the film, so that there is no motion of the image on the film during the exposure. If the first course is chosen, the exposure must not only be extremely short, but the subject must be brilliantly illuminated in order that the film may be properly exposed. The electric spark offers the most satisfactory solution; it can be made very short—on the order of a few millionths of a second—and can be repeated at almost any desired frequency and with an intensity sufficient for full exposures under favorable conditions.

In France, Bull, who since 1903 has continued the investigations begun by Marey at the Physiological Institute, has by means of electric-spark kinematography succeeded in making as many as 15,000 photographs per second. His early work was concerned largely with the flight of insects; but during the war his services were commandeered by the government for war purposes, and he carried out in his laboratory at the Institut Marey a long series of investigations on the flight of projectiles of various kinds and under different conditions.

The camera which Bull used for his studies of insect flight, and later for his work on the flight of projectiles, consists of a drum about 13½ inches in diameter, to the circumference of which a strip of motion-picture film sufficient for 56 exposures can be attached. There is a slight deformation of the image arising from the curvature of the drum, but this is so slight as to be of little importance. The drum carrying the film is enclosed in a light-tight box which prevents all light from reaching the film, except that coming through the lens. The drum is driven at the required exposure by an electric motor. An electric release opens the lens when the subject is in position for the exposure and closes it automatically at the end of one revolution of the disc, thus preventing double exposure of the film.

XUM

Except for this, there is no shutter; the electric spark which provides the illumination for making the pictures is itself discontinuous, so that no obscuring shutter is required for making the exposures. The frequency of the sparks is controlled by an interrupter consisting of a circular disc of ebonite attached to the shaft of the drum carrying the film. This circular disc of ebonite has 56 equidistant strips of copper, and as the drum revolves the two brushes of the interrupter make and break the primary circuit.

Even with such a camera, the photographing of insects in flight is an operation requiring considerable skill, an unlimited amount of patience, and some luck. It is evident that the insect must be given sufficient room for flight, or its motion will not be normal, and at the same time it must be within range of the lens and in sharp focus. Furthermore, since the complete strip of film is exposed in one revolution of the drum, requiring only a fraction of a second when pictures are made at the rate of several thousand per second, the film must be exposed at exactly the right instant, if one is to secure precisely the phase of movement under investigation. To solve this problem, Bull designed a number of ingenious devices which release the shutter the moment that the insect begins its flight, so that the strip of film is exposed directly after the insect has taken to the air and before it has had time to move beyond the range of the lens. For insects which take to flight immediately upon being freed, the device actuating the shutter consists of a small pair of pinchers controlled by an electromagnet. This clamp holds the insect firmly, but in such a way as to cause no injury to the specimen. This clamp holding the insect is connected with the electrical circuit controlling the camera shutter, so that the moment the insect is released the shutter of the camera will be opened and the photographs made. For larger insects, which hesitate before taking to the air, several other devices are employed, according to the size of the insect. In one of the devices evolved by the ingenious experimenter, the insect is placed in a glass tube just large enough to contain it. On crawling to the free end of the tube the insect lifts up a mica shutter partially obscuring the open end of the tube, and in so doing completes the electrical circuit which opens the camera shutter. In still another device, for use with still larger insects, the weight of the insects is used to release the shutter. This release consists of a small aluminum plate which is counterbalanced and extends beyond the open end of a small glass cylinder. The insect leaves the glass tube and crawls to the end of the aluminum plate. When it finally takes to the air and leaves the plate, the counterbalanced falls and completes the circuit, which opens the shutter.

With such precautions, the danger of failure is greatly reduced and the many excellent films which Bull has made in his laboratories at the Institut Marey in Paris are at once a tribute to his ingenuity in the design of the apparatus as well as to his skill and patience in using it. Some very interesting details concerning the flight of insects have been brought out by these studies—details which could have been discovered in no other way except by high-frequency photography. For example, it has been found that the movement of the wings of all insects always show the same general characteristics. It was determined that the strength of the first wing movements in taking to the air is less than those which follow immediately, but that the rhythm remains the same. The swiftness of flight is not controlled by the swiftness of wing movement, but by varying the angle of the wing. Although under ordinary circumstances the rhythm of movement is very much the same at all times, it may change under special conditions such as fatigue or cold.

As mentioned previously, the facilities of the Institut Marey were requisitioned by the French Government during the war, and the methods which had been used with such success in photographing the flight of insects were turned to the investigation of the flight of projectiles. Substantially the same principles were employed in this work as in that already described, but a new camera was built, which made it possible to make as many as 25,000 photographs per second. Electrical devices on the order of those described in the chapter on projectile photography were used to open the shutter and set off the sparks. Considerable difficulty was experienced at first in securing clearly defined sparks; the high speed produced the effect of a continuously burning arc rather than a series of individual sharply defined sparks. This problem was finally solved by directing against the spark-gap a swift current of air which broke up the continuous arc and preserved the individual character of the spark.

The pioneer in this field, however, was the German, Cranz, a professor at the Berlin Military Acadmey.

Cranz employed practically the same principles in his work with projectiles that Bull did with his work on insects, but his camera was much more complex and was designed to work at higher speeds and to accommodate a greater length of film than that used by Bull. The film is run from one steel cylinder to another, instead of being attached to a revolving drum, and thus a greater length of film can be exposed at one time than is possible when the film is attached to a revolving drum. Cranz succeeded in making as many as 25,000 pictures per second with his camera. At this speed the motion of the projectiles with which he worked is so greatly retarded that one can see the hammer of the automatic fall, followed by the emergence of the bullet moving across the screen no faster than a person walks. Finally, we see it enter and emerge from a thin steel plate.

High-frequency cameras of the type already described are suitable only for a few specialised lines of research, and many attempts were made to design a high-frequency motion-picture camera not so severely limited as to length of film and one which could be used with ordinary light sources. In the past few years a certain degree of success has been reached in this respect, and there are now several high-frequency cameras capable of making from 500 to 5,000 exposures per second, while a maximum capacity of 20,000 exposures per second has been attained in a specially constructed camera designed by Baron Shiba of the Aëronautical Research Laboratory at Tokyo. These cameras open up few fields which could not be exploited by means of electric spark kinematography.

(*To be continued in November issue*)

LONDON LETTER

CARINE AND WILL CADBY

THE other day we met a neighbor—a painter—in Shaftesbury. We could at once detect that something had happened to him, for he was obviously aglow with suppressed excitement. It soon came out. He had by pure chance just come across one of his own paintings, done forty years ago, and he was, then and there, going to clean it down and see what his work of that date looked like nowadays. "It's a big canvas", he said, "which was hung in the Academy in 1890, and there is no space in our cottage to put it, and I have not told my wife of its discovery. She would not tolerate another 'child' coming home to roost. We have too many on the walls already!"

All our sympathy instinctively went out to the painter. What a stirring of old memories bringing back the wrestling and struggling with his medium, and the eventual success—hung in the Royal Academy, sold and lost sight of, only to confront him forty years later in this out-of-the-way town! Easy tolerance for the youthful expression of ideas and the aiming at goals long since left behind, through the experience of many years of work, would surely be uppermost in the man's mind as the dingy canvas slowly revealed its original intentions under the careful cleaning of its creator.

One could not help wondering how many photographers would care to meet their "masterpieces" of forty years ago. Even if they had not faded, the subjects and treatment in many cases would strike one as out of date. And this would particularly apply to portraits, for landscape is not subject to phases of fashion.

But here our mind instinctively travels back to that wonderful exception, Mrs. Cameron, whose photographic portraits of an even earlier date hold their own, both technically and pictorially, and which to our minds are far above much of the present-day artistic work. When we realise that they are a product of the early days when the picture had to be made while the plate was still wet—when we remember the primitive printing-processes then in vogue—it emphasises the all-importance of the personality behind the camera. Mrs. Cameron's portraits are classics. They have already stood the test of time and must ever grow more valuable and interesting as pictorial records of the earliest days of photography.

The International Kanchenjunga Expedition has failed to conquer the second highest mountain in the world, and Mr. Smythe—the English photographer and climber of the expedition—has summed up the lessons and achievements of the adventure in two articles which have appeared in *The Times*.

The interest of Mr. Smythe's account to us photographers lies in the fact that photography led the climbers astray. Mr. Douglas Freshfield, in his book "Round Kanchenjunga", had pointed out the most likely lines of attack, and his photographs from the glacier seemed to indicate a reasonable angle of approach to the summit. But foreshortening and distortion, the latter possibly atmospheric, through the lens, gave an entirely wrong impression. What looked like rocky shelves in the photographs turned out to be 4,000-foot-high rock and ice slopes set at a hopelessly steep angle for climbing. How well we know this deceptive showing by the camera on even small-scale mountains! And, of course, no amount of enlarging of the original negative would alter the deception caused by foreshortening and distortion.

Wind, rain, and a low temperature as usual ushered in our holiday season, and we only wish we could have transported over to America, where they would have been welcomed, some of the heavy clouds that dropped their moisture so generously! Yesterday our village fête was spoiled by torrents of rain which arrived at the scheduled moment for opening, and the weather also harassed the organisers of a Children's Carnival.

The weather is certainly spoiling holiday sport, but it is offering photographers the compensation of most wonderful skies. When the rain is not coming down in sheets, there are brilliant intervals that yield cloud-effects, which in our most ambitious moments we could hardly imagine possible. Not only are the skies dramatic and beautiful, but also photographic—luminous lights and heavy cumulus darks giving just the contrasts we need and so seldom get.

These skies have been much appreciated at the Military Tattoo that has been held this week near us on Salisbury Plain. Luckily, all the evenings of an exceptionally wet and stormy week have been fine, so that the open-air performance has not been spoiled. Although the arena was strongly illuminated with gigantic searchlights, the skies enhanced the stage-effects, and the Battle of Hastings certainly gained in sensation by dark clouds racing across the sky when William the Conquerer was landing.

This Grand Military Tattoo is the event of the season in the West, and not to have visited it almost conveys a social stigma! But most of its huge audience is drawn from London, and it is eastwards that one sees a procession of lights, like sparks from a fire, gradually dwindling and scattering in the distance. It was a pretty sight watching the cars disappear after many of them had had to be towed out of the mud of the parking-places.

Last week the *Progress Photographic Review* published its summer number. It has sprung ahead amazingly, and in its editorial there is a suggestion of making it a monthly. If it goes on in the inspiriting way it has begun, photographers over here will welcome it. We personally do not feel the need of a monthly, always having our PHOTO-ERA MAGAZINE to look forward to; but, for years now, there has been a shortage of photographic

(*Continued on page 238*)

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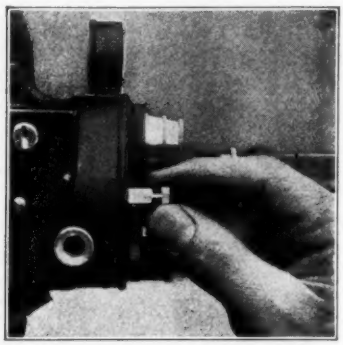
WHAT'S NEW?

A department reserved exclusively for the announcement and description of new photographic goods and services.

New Feature for Victor Model 5

VICTOR has added another refinement to the Model 5 Visual Focusing Camera. The turret front of the Model 5 is equipped with three-knurled aluminum shifting pins, which make it possible for the head to be rotated without touching any of the lenses.

One of these pins has been converted into a plunger lock, which prevents accidental or unintentional shifting of the turret, although it does not, of course, have any effect on the quality of the pictures made with the camera.



NEW VICTOR TURRET-LOCK

The lock operates on the "push-pull" principle. To unlock, pull out the pin tip. When lenses have been rotated to the desired position, simply push the pin tip back in, thus locking the turret rigidly in place.

The Victor Model 5 was the first 16-millimeter American camera to be equipped with built-in visual focusing. Victor prism focusing is unique in that the focusing finder may be instantly adjusted to the eyesight of the individual using the camera—a feature which promotes accuracy and which has not yet been incorporated in any other 16-millimeter camera.

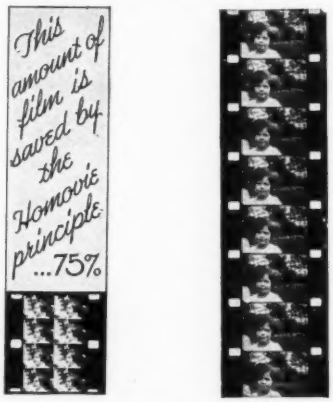
Another feature of this method of focusing to which the manufacturer calls particular attention is that the focused image is exact aperture size and shows all of the field included by the lens. The ground surface of the focusing prism is exactly the same distance from the lens as is the film when pictures are being made, an arrangement that obviates the necessity of using an internal compensating lens in the focusing system. In other words, the eye sees in the victor finder the exact field that is transmitted by the lens to the film.

Kemco Homovie

REPORTS have been in circulation for about a year concerning the Kemco Homovie, made by the Kodel Electric and Manufacturing Company of Cincinnati. The Kodel Company is well known in the radio trade as the manufacturers of the "Kuprox" dry rectifier unit.

Homovie is almost as revolutionary as Kuprox. Although camera and projector use 16-millimeter film, a 100-foot roll of film gives the same action time as 400 feet would give in the usual equipment. This is done by a special intermittent movement which moves the film from side to side as well as forward. The purpose of the oscillating motion is to make possible—in conjunction with the 3.75 x 5-millimeter aperture—four individual pictures in the same film-area usually employed for a single frame.

The film moves forward 3.75 millimeters (instead of 7.5 as in the usual 16-millimeters camera), then to the left 5 millimeters, then down



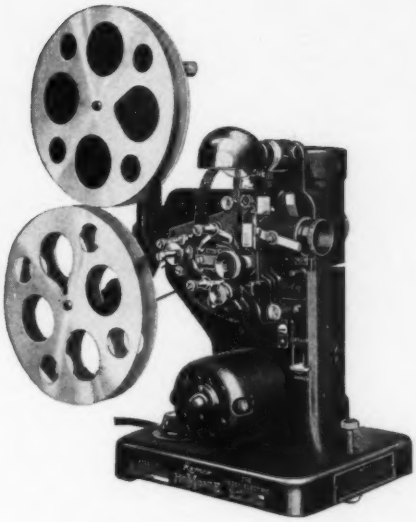
KEMCO HOMOVIE AND REGULAR 16MM. FILM COMPARED

3.75 millimeters, then to the right 5 millimeters, down 3.75 millimeters, left 5 millimeters, down 3.75 millimeters, right 5 millimeters, and so forth.

It would appear that such a small aperture—(frame size)—would make suitable projection impossible; yet, in a recent demonstration in New York, films of this type were projected to give a fully satisfactory screen picture approximately 29 x 38 inches, almost filling the usual 30 x 40-inch screen.

The camera is rectangular in shape, made of a bakelite composition, in an attractive shade of russet brown. The camera is heavy enough to

THE NEW KEMCO HOMOVIE CAMERA



THE NEW KEMCO PROJECTOR

give it good balance, without being so heavy that it is cumbersome. It is provided with a direct finder which is equipped with masks showing the field of view for both the standard 15-millimeter lens and for the 2¾-inch telephoto lens. It should be borne in mind that the relation of lens focal lengths to film is the proportion of lineal frame dimensions, not areas. Thus the 15-millimeter lens gives the same effect as a 30-millimeter lens on the usual 16-millimeter camera, and the 2¾-inch lens is equivalent to a 5½-inch lens on the usual 16-millimeter camera.

The camera is provided with an automatic, non-reset footage meter. The spring motor is sturdy and will operate the camera for 50 seconds without rewinding.

The projector is a beautiful piece of mechanism and is finished in brown crystalline lacquer to match the color of the camera. It is fitted with a 250-watt, 50-volt lamp and has a special condenser system which will focus the maximum available cone of light upon the small aperture, thus making possible the extreme projection size mentioned. By an ingenious adjustment, the projector may be changed over instantly for use with standard 16-millimeter film, while a touch of a small lever readjusts the cone of light for the larger aperture.

The demonstration of the Homovie was quite satisfactory, and due to the saving of 75 per cent in film cost this equipment will no doubt be quite popular with film amateurs.

In addition to the camera and projector, the Kodel Company announce a full line of accessories for the home-movie enthusiast. These include a film-editing outfit for any 16-millimeter film, a title-outfit, a single-frame enlarging-outfit, an electric-drive unit, reel clips, identification leaders, film albums, film-splicing outfit, emergency film splices, Kemco screens, Homovie console, and transformer and resistance for using the projector with 200- to 250-volt A.C. or D.C. current. A sound-film attachment is also announced for the near future.

HERBERT C. MCKAY, F.R.P.S.

THE KEMCO ELECTRIC DRIVE

Filmo Camera with Critical Focuser

To give the amateur movie-maker the same precise focusing facility that the professional cameraman has had at his disposal in the Bell & Howell standard studio camera, this company's engineers have designed a Critical Focuser for the Filmo 70-D home movie camera.

This unit includes all the advantages of the professional camera focusing system and, further, gives an even greater magnification of the image—a magnification of 25 diameters. This magnification is of great help, because the minute details of the object to be photographed are thus rendered clearly visible and can, therefore, be brought

to a critical degree of sharpness with the least effort on the part of the operator.

The Critical Focuser permits the operator to focus any focusing-mount lens visually upon any subject at any distance from the camera. In other words, it relieves him of the necessity of measuring distances and eliminates guessing distances, which has heretofore been the commonly used method of determining the setting of the lens-focusing dial.

This new focusing device is a built-in feature of the 70-D Camera, being incorporated in the camera head, and cameras so equipped are distinguished from others by the designation Filmo 70-DA. The 70-DA Camera is the same in all respects as the Filmo 70-D except that it has the new focusing feature.

Owners of 70-D Filmo cameras may have the Critical Focuser installed on these cameras at a nominal price by sending them to the factory.

Ampro Projector

One of the recent additions to the line of amateur projection equipment is the Ampro projector. This is a high-quality projector designed for the most rigorous projection service.

The projector itself is finished in a new satin black finish, as unusual as the machine itself. The lines are attractive, and the complete ensemble of machine, chromium plated parts and aluminum reels, is extremely attractive.

The lamp used is the new General Electric concentrated filament lamp. The surface-area of this filament is considerably less than in the usual 250-watt lamp and gives an extremely brilliant, white light. The makers of this projector claim for their projection the brightest and whitest light of any 16-millimeter projector now on the market. Upon demonstration, the brilliancy of the film is certainly highly satisfactory.

The mechanism of the projector is unusually accessible, a screw driver serving to dismount the mechanism completely. The driving gears are so arranged that it is extremely simple to connect a synchronous turntable or other talking-film device.

The feed is straight line, using two sprockets. These sprockets are threaded independently, an operation which is extremely simple, due to the spring shoes which serve to hold the film in place.

The tilting adjustment is especially well designed. A circular bearing surrounds the motor. This bearing supports the lamp house and projector mechanism. A chromium plated thumb nut extends at the right side of the machine. By turning this nut, the entire projector revolves upon the circular bearing. This affords a tilt which works smoothly and easily, permitting exact registration of the projected frame upon the screen, without the unsteadiness found in other projectors.

The controls are grouped at the right side of the base and include the motor control, the on-and-off switch, and the forward-and-reverse switch.

This new projector will be a welcome addition to the line of 16-millimeter equipment and will no doubt make many friends.

Herbert C. McKay, F.R.P.S.

Developing Two Vest-Pocket Rolls in Kodak Tank

Enclosed are two pictures showing a scheme which I have been using for developing vest-pocket size rollfilms and which I should like to pass on, if you think readers of Photo-Era Magazine would be interested in it.

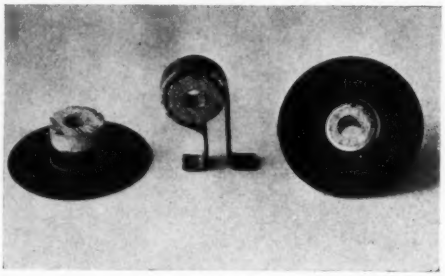


FIGURE 1 SPOOL HOLDERS

BURR K. OSBORN

I develop my 3¼ x 4¼ Graflex films in the five-inch Kodak tank. After carrying around my Graflex for ten years, I decided to supplement it with a smaller camera, and I went to the other extreme and bought a vest-pocket. It occurred to me that it should be possible to develop two of the vest-pocket rolls side by side in the five-inch tank. This was accomplished by means of the homemade adapters shown in the pictures, which hold the two vest-pocket spools side by side in the changing box while they are wound simultaneously onto the developing-reel with the apron.

The adapters are made from an old film-spool and a bit of quarter-inch wide brass-strip. The vest-pocket spools have projecting ends instead of holes and the sawed-off spool-ends serve to hold the outer ends of the spools. The piece of brass bent around another piece of the wooden spool core snaps into the adjustable spool-holder in the box and holds the adjacent ends of the vest-pocket spools.

Although the five-inch tank requires about 44 ounces of developer, it is not uneconomical when one considers that sixteen exposures are developed at once.

Burr K. Osborn.

FIGURE 2 SHOWING ARRANGEMENT

BURR K. OSBORN

HERE, THERE AND EVERYWHERE

To ensure publication, announcements and reports should be sent in not later than the 5th of the preceding month.

The New Eastman Gelatine Corporation

THE Eastman Gelatine Corporation, a newly organized Massachusetts subsidiary of the Eastman Kodak Company, has made a contract with the American Glue Company for purchasing the gelatine plants and business of the American Glue Company. This information is contained in a communication sent to stockholders of the latter company, calling a meeting for September 4 for "further ratification and approval" of the transaction.

The glue business of the American Glue Company is not affected by the contract, and that company will also retain all its cash and accounts receivable. The transaction encompasses plants, inventories, brands, goodwill, and other similar assets pertaining to the gelatine departments of the business.

The Eastman Kodak Company already manufactures gelatine, one of the most important raw materials of photographic film, paper, and plates, in Rochester and in Germany. Purchase of the new plants will provide a substantial additional supply.

The main gelatine plant of the American Glue Company is at Peabody, Mass., in the heart of a region of tanneries. Leather trim from tanneries is the principal raw material of gelatine. The plant of the Essex Gelatine Company, close to the American Glue Company's gelatine plant and recently acquired by that company, is included under the contract of sale.

The Eastman Gelatine Corporation will take over the plants and business almost immediately upon ratification of the sale by the American Glue Company stockholders. Albert Goodhue, manager of the Glue Company's gelatine departments, will become vice-president and general manager of the Eastman Gelatine Corporation. William G. Stuber, president of the Eastman Kodak Company, is president of the subsidiary.

The abrasives and rendering divisions of the American Glue Company and its subsidiaries have already been sold. Sale of the gelatine departments will permit the Glue Company to concentrate upon the production and sale of glue as its only product, according to the notice to stockholders, and will permit it to meet the increasing competition in that line.

"Dallmeyer Lenses for Amateur Kinematography"

THE increasing interest in amateur kinematography has brought about what is virtually a special field of lens manufacture. When amateur kinematography had its beginning, we doubt whether even the manufacturers of the earlier equipments realised just what was ahead. Sometimes we do not believe that they had in mind anything more than to make a practical, reliable, miniature motion-picture camera which was intended solely for the amateur and did not in any way attempt to encroach on the professional equipment. However, whether this idea was held or not, the fact remains that amateur motion-picture equipment to-day is paralleling professional equipment in virtually everything but the size of film used. The result of this turn of events is that the optical equipment of amateur motion-picture cameras must equal that which is supplied with professional equipment. All of which brings us to call attention to the splendid booklet on "Dallmeyer Lenses for Amateur Kinematography". This booklet should be in the hands of every owner of an amateur motion-picture camera. Whether Dallmeyer lenses are used or not, the optical principles and laws clearly set forth will apply to all lenses; and, in addition, there are numberless suggestions and helpful hints which can be used to advantage by the amateur kinematographer. Our readers will do well to write to Herbert & Huesgen Company, 18 East 42d Street, New York City, for this booklet, which will be sent promptly and will be found to be of outstanding practical value.

The Sportsman Photographic *Contest*

WE have received an announcement from *The Sportsman* magazine of a photographic competition open to both amateur and professional photographers in all countries. Photographs will be judged on the basis of their artistic merit, unusual treatment, and suitability for publication in *The Sportsman*. Decisions will be withheld and all photographs retained until after December 1, 1930. A first prize of $250 is offered and a second prize of $100. For the ten best photographs a sum of $50 each will be paid, these twelve photographs to be published as frontispieces in *The Sportsman* throughout the year 1931. All photographs will be judged the first week in December, by a committee of competent artists, and announcements of prize winners will be made as soon after the decisions as is practicable. All photographs submitted should be addressed to Photographic Contest Editor, *The Sportsman*, 60 Batterymarch, Boston, Mass., U. S. A. Doubtless many of our readers will be interested in submitting photographs to this competition.

New Equipment for "Talkie" Instruction

THE New York Institute of Photography, 10 W. 33d Street, New York City, has just installed complete equipment for recording and reproducing "talking" films. The recording-equipment used in studios is designed for one type of work only; and, for this reason, such equipment is not perfectly adapted for use in giving instruction in

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this subject. Because of this, the New York Institute had a recorder designed and built for its exclusive use which incorporates all of the fundamental features of synchronous "sound" recording, yet one which is particularly well adapted for teaching.

Although this special recording-equipment involved a great expenditure of money, it is merely in keeping with the policy of this school of photography to be strictly up to date in all activities connected with this field.

A great deal of interest has been aroused by this equipment. A number of engineers who are working in this field have examined the machines with the deepest interest and have expressed their admiration, both as to the design and workmanship of the equipment. Complete instruction in recording and reproducing "talking" film is included in the regular course at the Institute without extra charge.

American Legion Convention, October 6–9, 1930

MANY of our readers are members of the American Legion or the American Legion Auxiliary. The National Convention will be held this year in Boston, October 6 to 9 inclusive, and every effort is being made by city, town, and State officials to welcome all who attend the Convention and to make them feel that it will be an event which they will always remember as being one of the best conventions held anywhere. We mention it here just as a gentle reminder to those of our readers who may not yet have decided definitely to attend. Full particulars with regard to the program, accommodations, and other information may be obtained by addressing the 1930 National Convention Corporation, American Legion, 602 Statler Building, Boston, Mass.

The "Fresson" Carbon Process

WE have received quite a number of inquiries with regard to the "Fresson" process. We believe that it will be of benefit to our readers to remind them that there was a very helpful article on page 179 of "The American Annual of Photography—1929", entitled "The 'Fresson' Direct Carbon Printing Process", by Charles M. Mouret. In this same issue there appeared an advertisement stating that Mrs. Charles M. Mouret, 431 Classon Avenue, Brooklyn, N.Y., was the sole agent in the United States and Canada for the necessary materials for this process.

"Talkies Will Not Supplant Textbooks"

THAT motion-pictures, even talking pictures, will never supplant either the textbook or the teacher, but that they will certainly be a tremendous aid to both and will permit bringing educational facilities into many parts of this and other countries, where they would not otherwise be available, was pointed out by Joseph A. Dubray, manager of the Technical Service Department of the Bell & Howell Company, Chicago, in an address before the student body of the University of Minnesota recently.

Mr. Dubray emphasised the fact that a nucleus of educational motion-pictures should be made by leading educators in the research laboratories of the great educational institutions of the country. This, he stated, with educational pictures made by the research laboratories of commercial institutions, would afford a source of material which would, in due time, be extended and modified to serve all educational purposes.

He showed four 100-foot educational pictures from the Filmo Library by way of illustration of his remarks, and also a full reel obtained from the General Electric Company, entitled "Beyond the Microscope". He also gave a technical description and practical demonstration of Technicolor, Multicolor, and Kodacolor. He had a conference, too, with the president of the University, Dr. L. D. Coffman, touching upon various phases of the use of movies in educational work.

Reprints from Motion-Picture Academy

DOUBTLESS most of our readers know of the excellent Technical Digest Service which is being maintained by the Academy of Motion Picture Arts and Sciences, 7006 Hollywood Boulevard, Hollywood, Calif. Already there have been some twenty reprints of lectures, articles, and reports which have been made available to amateur and professional kinematographers through this service. With a few exceptions, these booklets may be obtained for twenty-five cents a copy. Two recent ones are "Camera Silencing Devices" and "Methods of Silencing Arcs". Our readers will find much of interest and value in this excellent series of booklets, and we suggest that they obtain the complete list.

LONDON LETTER

(*Continued from page 233*)

literature on this side. So many photographers nowadays want to push on and make their photography more worth while. The editor of the *Progress Photographic Review* understands this and caters for those whose ambition is to succeed in pictorial work and be able to exhibit, or who are hoping to be able to make their cameras earn money. What about the groundlings who are quite content to do as they have done and just make snapshots? the reader may ask. But then these are not the people who would buy a magazine; so the editor's knowledge of psychology is sound.

Mr. Dudley Johnson has written a lucid and illuminating article on "The Future of Pictorial Photography", and as one of the most able presidents of the Royal Photographic Society he knows his subject from *a* to *z;* while "A Day in a Commercial Studio", by C. T. Wells, is an eye-opener to those who are interested, but ignorant of this side of the subject.

Correction

IN the article "Professional Copying for the Amateur", by J. G. Pratt, which appeared in the September, 1930, issue, there was an error on page 139. The manufacturers of Contrasto film are the Polygraphic Company of America, and not the Polychrome Company. We regret this error and trust that our readers will keep the correction in mind.

Date of Photo-Congress Changed

THE date of the Eighth International Congress of Photography has been changed in order to make it possible for members to visit the Third International Radiological Congress, which will be held in Paris July 27–31, 1931. The eighth International Congress of Photography will be held August 3–8, 1931, in Dresden, Germany.

C. E. KENNETH MEES, *National Secretary of American Section, Commission Permanente.*

Brooklyn Institute—Department of Photography

DURING the season of 1930–31 the Brooklyn Institute of Arts and Sciences, Department of Photography, will conduct three courses of instruction in photography. The first course is entitled "Fundamentals of Photography", and the instructor is Mr. James C. Coppola; the second is a course in the "Advanced Technique of Portraiture and Pictorial Composition", and is conducted by Mr. Adolph Fassender; and the third course is in "Amateur Motion-Picture Making", given by Mr. Russell C. Holslag. A special circular with regard to this third course will be sent on request. For further information apply to the Registrar, The Brooklyn Institute of Arts and Sciences, Room 35, Academy of Music Building, 30 Lafayette Avenue, Brooklyn, N.Y.

The Safe Foreman

THIS publication is an accident-prevention magazine under the management of Richard H. Porter. Mr. Porter is interested in receiving pictures showing how accidents may be prevented. It is the policy of the magazine to pay $2 cash on acceptance for pictures suitable for regular safety illustrations, and $3 for photographs which can be used in their "What Others Are Doing" section, and which show unique ideas in efficiency. They accept or reject all material immediately and request that contributors send stamped envelopes. By addressing Mr. Porter, Care of *The Safe Foreman,* 180 North Wacker Drive, Chicago, Ill., detailed information may be obtained.

We are taking pleasure to call our readers' attention to this possible market for those who are qualified to carry out this sort of work.

Dark "Room"-inations

ONCE upon a time, thousands of years ago when we were in high school, we wrote a scholarly essay on the manner in which wheels served us, from perambulator to hearse. If we had time we should embark, here and now, on a discourse anent the manner in which photography tracks us through life.

For example: At the age of forty-nine minutes, or thereabouts, Baby's First Picture is made by his excited Dad. It doesn't look like anything at all, but Daddy shows it to all and sundry for three weeks, when another snap is made of Baby. This time it's a little better, for Mother is holding the infant, either near a window or out in the garden. This negative is reproduced largely and scattered broadcast to the awe, admiration, and astonishment of relatives—and others who are glad they're not relatives.

During the first year, Baby is shot on an average of once a month, on his monthly birthday. Ostensibly, these pictures are to go in the Baby Book. But they get lost.

Then comes the momentous day when Baby starts to walk. Daddy gets so excited he almost buys a movie outfit. Anyway, negatives are exposed recklessly.

I've forgotten whether teeth come before walking, but we mustn't overlook First Teeth. Must have a picture of them.

Next come pictures of Baby in the sand pile, Baby in the snow, Baby with kitten, or Baby with pup. These are the "cute" pictures—so help us!

Baby then figures largely on Christmas cards. Baby is slowly becoming a—well, for the sake of convenience we'll consider it a male baby—boy, and he is pictured with his first tricycle, his first bicycle, his first pair of knickers, and his first black eye.

About this time somebody gives the lad a camera of his own, to the vast delight of the photo-finishing profession. In school he first discovers the utter ecstasy of group portraits and contributes to the early demise of some patient studio photographer.

His first formal portrait is for his school annual. He appears very sober. And it's right that he should, for it is a solemn moment. He gives one of these pictures to a young lady in the neighborhood. Life has begun, now, in dead earnest.

His college career is filled with strange photographic excrescences. More year books have to be filled; more group photographs have to be made; more young ladies have to be supplied with signed portraits—and more young ladies' portraits are paraded atop his bureau.

After college there's apt to be a lapse in his photographic activity. But after a while he gets married. And the local photographer throws up an incredible barrage of lights, lenses, and focusing cloths. The results, in which the groom is located only by persevering effort, are elaborate and expensive, but at this stage in the game he thinks he is going to get married only once; so he shoots the whole nickel.

If our young man is prominent socially, the papers print his bride's portrait. And that makes the marriage legal.

Comes now another lapse. Of course, after a time there may be a baby in the family, and another Baby Book. But we'll hurry over that.

The man may get promoted or become an officer in the local Rotary. He is asked for his picture, and finds that he hasn't a thing he can offer. So he gets a portrait made. Fifty years later he is still using this portrait. It is printed in the local papers the morning after he dies, and his wife puts the clipping in the edge of her portrait of him. A very pathetic gesture.

And twenty years later somebody runs across the picture of the poor chap. "Oh, look!" exclaims somebody. "Aren't old photos funny!"—*Rexo.*

[We feel indebted to that lively little publication, *Rexo,* published by Burke & James, Inc., Chicago, Ill., for this humorous, yet truthful, description of the part played by photography in the lives of many of us.—EDITOR.]

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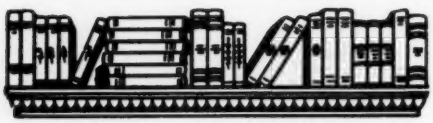

BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

A Treatise on the Air Brush, with Progressive Lessons, by Samuel W. Frazer and George F. Stine. 203 Pages, 98 illustrations and figures. Price, cloth, $2.50. Boston: The American Photographic Publishing Company.

The authors of this book are well known to photographers, as both have specialised in air-brush retouching and the making of designs by air brush. The air brush and its use are described in detail by Mr. Frazer in Part I, and in Part II the authors collaborate in a progressive series of lessons on the manipulation of the air brush. Part III is devoted to coloring photographs with the air brush and is prepared by Mr. Stine. Although it is true that most amateur photographers might not have use for an air brush, yet in professional studios, and especially in commercial studios, the modern air brush is virtually a necessity. It is rarely, indeed, that the industrial photographer can find his subject to his liking with regard to position and lighting. It is often a case of making the picture under extremely difficult and unfavorable conditions, and then resorting to retouching and the air brush to make a satisfactory print for reproduction purposes. Those of our readers who are engaged in portrait work, in the making of landscapes and architectural subjects, and particularly in industrial photography, will find it to their advantage to read this book on the air brush. Whether they own an air brush or not, it will be of value to them to be able to direct the retouching work intelligently and with a view to bringing out the important features of the work in hand. We recommend this book to all who directly or indirectly have occasion to have air-brush work done on their own prints, or on those that belong to others. Typographically, the book is attractively presented to the reader, and we believe that it will be well received by all those who wish thoroughly practical information on the modern air brush.

Art Principles in Practice: For the Student and Layman in Art, by Henry Rankin Poore. 242 Pages and 80 photographic illustrations. Price, cloth, $4.00. New York: G. P. Putnam's Sons.

Of the many excellent books on the general subject of pictorial composition, there is probably not one which has enjoyed greater popularity or been of greater service than the author's "Pictorial Composition, and the Critical Judgment of Pictures". Probably there is no author who is better qualified to present artistic principles to the layman than Mr. Poore. His latest book, "Art Principles and Practice", is a step in the exposition of artistic principles which will be heartily welcomed by all readers of Mr. Poore's earlier books. The volume is one which is addressed to those who are eager to approach the sources of the things that are beautiful. By means of reproductions of many of the leading paintings of the world, Mr. Poore points out those principles which he feels will help his readers to attain artistic success in painting or in pictorial photography.

Mr. Poore has divided his book into twenty-four chapters, and in these chapters the reader will find virtually every artistic slant and school defined and represented. He will further find such pictorial principles as balance, proportion, sequence, recurrence, congruity, rhythm, gravity, decorative basis, and other similar subjects discussed at length. Without a doubt the pictorial photographer who reads thoroughly and absorbs fully the material in this book will find himself well on the road to a clearer and more beautiful conception of all things artistic.

The Art of Retouching Photographic Negatives, and Practical Directions How to Finish and Color Photographic Enlargements, etc., by Robert Johnson. Twelfth edition, revised and rewritten by T. S. Bruce and Alfred Braithwaite. Revised and enlarged by Arthur Hammond, A.R.P.S. 154 Pages, photographic illustrations, and diagrams. Price, cloth, $2.50. Boston: The American Photographic Publishing Company.

The matter of retouching negatives and the finishing and coloring of photographs is one which has become of greater importance than ever before during the last two or three years. Among professional photographers, as well as amateurs, there has been a definite need for specific, simple, and yet practical instruction in the subject of retouching and coloring. Although there are several processes and methods in use, it is obvious that for either the professional or amateur to do really creditable work he must go into the subject more thoroughly than some processes require. This is especially true when a good price is to be charged for the work done.

In the present revised and enlarged edition, the book is divided into two parts—one devoted to negative retouching and the other to finishing and coloring photographs. In the first part, the general subject of retouching is defined and explained, and then the reader is introduced to the equipment required and the various implements that are used. Next, the matter of modeling and retouching the details in the face, neck, bust, and arms is taken up thoroughly, and this is carried on to include children, aged people, and in fact all types of possible subjects. Part I is concluded with a chapter devoted to the retouching of landscape and architectural negatives and a number of miscellaneous directions of great service.

Part II goes into the matter of material, equipment, and instruction in the retouching and coloring of photographs. The application of color to all types of photographs is gone into thoroughly, and if the reader will follow directions carefully he should be in a position to do creditable work within a short time. Altogether, the book should meet a definite demand and, typographically, it is up to the usual excellent standard established by the American Photographic Publishing Company.

THE AMATEUR KINEMATOGRAPHER

HERBERT C. McKAY, F.R.P.S.

School Days

With the coming of fall, school has begun again. The kodak, which was once a treasured part of the school days' equipment, has given way to its modern counterpart, the movie camera.

Records will be made of the great events of school days; but it is a question whether or not the subjects filmed will be those which will be the most highly valued in days to come. Of course, the outstanding figures of school life will be prominent in the schools films; but it is questionable whether in later years a film of the baseball hero of the day will have as much interest for us as those scenes showing the activities with which we are more intimately concerned.

It is so easy to make a comprehensive record of school life that the opportunity which only comes once in a lifetime should not be neglected. This film record should start not with the arrival at school but with the departure from home. The arrival at school, the buildings, the reunion with old classmates, and all of those incidents of personal life which we accept as commonplace, are the very ones which should be given the most prominent place in our film record. By all means, the long hours in the study should not be neglected. The small group of intimates which congregate for a quiet evening together should receive due consideration. All of these may be regarded as routine. The personal school records should include a sufficient amount of all of those more intimate scenes to make the film really personal and individual.

Of course, it must also include the events of collegiate life which are enjoyed by the entire student body in common. Naturally, the outstanding athletic events must be included, and perhaps few of these have the permanent interest value that football has. Football, as well as baseball, makes the turret-equipped camera almost essential. It is somewhat difficult to move around during these games and, of course, anything resembling an encroachment upon the field of play would not be permitted. The only thing to do, then, is to try to secure a position from which most of the field can be favorably observed and then let a battery of lense make up for our inability to approach the players. A 15-millimeter lens is helpful, as it embraces such a wide angle that most of the field can be included. There is not a great deal of advantage to be gained through the use of a one-inch lens when a 15-millimeter is being used; so the next lens in focal length should be two inches, or somewhat less. The third lens should have a focal length of from 3½ to 3¾ inches. As it is almost impossible to use a tripod under such conditions, it is not advisable to try to use a lens of greater focal length than this.

A judicious interchange of lenses will be decidedly beneficial in making a good film story of the game. The 15-millimeter lens will give you a good view of the entire field or most of it, which will not only show all the players but the crowds as well. This will add to the atmosphere of the film. The intermediate lens is very good, indeed, for limiting the audience more closely to squad and team play, while the lens of longest focal length will enable us to bring out individual plays in an interesting manner.

Track meets offer many possibilities, but at the same time present a great many difficulties. Races run on a straight track are difficult to film, as it is impossible to get good shots of both the start and finish unless two cameramen are working together. Obviously, the oval track offers decided advantages.

Hurdle races, high jumps, and pole vaults can be made far more effective by having the camera less than one foot from the ground and pointing slightly upward. This greatly exaggerates the height of the jump. In such case the camera should be at least twenty-five feet from the bar. Some very interesting kinematic angles can be obtained by having the camera right beside the track and on the ground pointing along the track, so that the runners appear in the distance and run into the camera. The camera may be pointed almost directly upward from the same position, which will result in some very grotesque effects, but startling and novel nevertheless.

The hammer, the shot, the javelin, and the discus should all be photographed from a point somewhat behind the athlete, so that the entire flight of the object may be seen.

Of course, no film of college athletics would be complete without showing the celebration of the victors. As a great deal of this takes place at night, the camera should be equipped with a speed lens.

The activity of college life offers such an abundance of material for motion-pictures that it is difficult to know just what to photograph; but a little thought, a little balancing of community and personal life, judgment in selecting the most important events of the collegiate year, when combined, will result in a film whose value in later life can hardly be overestimated.

League Plot Service

The Amateur Cinema League has established a new service for members in the form of a made-to-order plot service. The department which takes care of this work is under the able direction of Arthur L. Gale.

Blanks are supplied to members who want to take advantage of the plot service. Upon this blank the member supplies certain pertinent information regarding potential actors, setting, properties, the general nature of the film, its length, and so forth. Working from this data, the League develops a plot whose simplicity or

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complexity is suitable to the probable ability of the applicant.

This service, in connection with the series of pocket manuals prepared by Mr. Gale, Mr. Holslag, and others of the League Staff, makes membership in the League distinctly worth while. If you are at all interested in amateur movies, and are not a member, you should correspond with the Headquarters of the League at 105 West 40th Street, New York City.

Sense and Sensitivity

If the lens is the eye of the camera, the film is certainly its brain, for here are received and recorded the impressions transmitted by the lens. The proper selection of film is of almost as great importance as the proper selection of the lens. Before discussing specific films, it might be well to determine with some degree of exactitude just what the film is.

The base of the film is made of a cellulose compound similar in many respects to celluloid, but lacking the great inflammability of that substance. Upon this base is a coating of transparent insoluble gelatin and upon this, in turn, a coating of gelatin, silver bromide, and minute quantities of other substances. The silver bromide grains are suspended throughout the gelatin. When light is allowed to fall upon this mixture, the grains of bromide are so affected that the submission of the film to the action of a chemical reducing agent converts them into metallic silver. The chemical change which takes place is effected by the so-called chemical or actinic rays of light. These are the blue, violet, and ultra-violet rays. As a consequence, objects which are blue or violet in color photograph as white, and other objects photograph as gray, the depth of which is determined by the amount of blue in the color of the object photographed. Red and orange, being the farthest removed from blue in the spectrum, are photographed as black. As pure red is visually much brighter than blue, the reversal of comparative tonal value is obviously objectionable. In order to overcome this fault, methods were devised for treating the emulsion with a dye. This treatment has the effect of extending the sensitivity of the emulsion to light-rays other than the blue and violet.

When an emulsion was perfected which extended the sensitivity to include green and some yellow, the result was called *orthochromatic*. Although a misnomer, this name is still given to this type of emulsion.

Further experiments extended the sensitivity to embrace all colors, including red. As the obviously correct name orthochromatic had already been used, this new emulsion was called *panchromatic*. Panchromatic film is sensitive to all colors; but the preponderant sensitivity, like that of the other films described, lies in the blue and violet of the spectrum. To overcome this lack of uniformity, a filter is placed over the lens in exposing the film. This filter is made of yellow glass or gelatin of such a shade of yellow that very little blue light can pass through it. Thus, by holding the blue back, the other colors have a chance to register. Such filters are also used to good advantage with orthochromatic film.

Accordingly, we have three general types of film: the ordinary, which is represented in motion-picture work by positive film stock; the orthochromatic, which is known as regular; and the panchromatic, which still bears its own name. The question confronting the amateur is the choice of film to be used. The only time that positive stock is properly used in the camera is when titles, drawings, and other objects in pure black and white are being photographed. Regular film (orthochromatic) is still the most widely used for general amateur motion-photography. Although it gives satisfactory results in a number of cases, it does not give absolutely satisfactory results photographing people or any object in which there is a preponderance of color other than blue and yellow. Panchromatic film, by reason of its sensitivity to all colors, provides us with a film which can be used for practically all purposes. Due to the greater brilliancy and general quality of pictures made upon panchromatic film, it certainly is highly desirable that every amateur should to as great an extent as possible use panchromatic film for all types of subjects. Panchromatic film possesses another distinct advantage in wintertime camera work.

A great deal of the camera work done in winter is done indoors by artificial light. Panchromatic film is decidedly more sensitive to such light than is the regular. We have, therefore, what is apparently an extreme speed film for incandescent work. These advantages are not all offered by this film. The improved contrast and brilliancy, the tonal scale which approximates the color-value of the original, and the increased speed when working by incandescent light, combine to make a film whose advantages are so obvious that the amateur will use it consistently unless there are specific circumstances which make the use of one of the other types more advisable. Certainly all pictures of any scenic value should be made with this film—any outdoor subject, any subject by artificial light. Hence we see that the entire range of average subjects is included in the field where the panchromatic film is pre-eminent.

The value of panchromatic film, however, is not fully apparent until filters are used. At least two filters should be used, one light yellow and one medium. The medium yellow is used whenever there is sufficient light, while the light yellow one is used when the light-conditions are not at their best. Of course, the addition of the filter means an increase in exposure-time of from two to four times; but with modern high-speed lenses this is not at all objectionable. If you have equipped your camera with one or more good high-grade lenses, go just one step farther and equip the lenses with filters; then start using panchromatic film as a routine procedure and you will certainly be delighted with the very great improvement in the quality of your film.

She was in Alaska looking over a fox farm. After admiring a beautiful silver specimen, she asked her guide, "Just how many times can the fox be skinned for his fur?"

"Three times, Madam," said the guide gravely. "Any more than that would spoil his temper."

Contact.

PORT OF PATRAS
NICKOLAS BORIS